Address

ON THE

SHORTCOMINGS OF SOME MODERN SANITARY METHODS.

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GENTLEMEN,—I have been for some years so strongly impressed with the shortcomings of one of the chief methods of modern sanitation that I felt bound, when the Council of the Sanitary Institute did me the great honour of requesting me to deliver the annual address, to choose for my subject that which was uppermost in my mind. The principal aim of sanitarians has ever been, and ever will be, the securing for the masses of the people the two chief necessities of life—pure air to breathe, pure water to drink. Whether or not we are able to secure these two necessaries depends very largely upon the method which we adopt for the treatment of putrescible refuse, and it is on this point, and on the modern fashion of mixing putrescible refuse with water, that I propose to address you.

It may be well to remind you that all dead organic matter is putrescible, and, when I speak of putrescible matter, I mean all organic matter, inclusive of excrement. Nature moves in a circle, animals feed on each other and on vegetables, vegetables feed on the dead bodies of animals and vegetables, and on the solid and gaseous excrements of animals. Animal and vegetable life are complementary, and mutually support each other. This is a law of nature, and when I make this assertion I feel I run no risk whatever of being contradicted. The laws of nature are inexorable—i.e., they are not to be set aside by human prayers—not even by that best of all prayers, labour. Those who disobey the laws of nature, or who enter into a contest with her, are sure to be worsted in the end. If we fight with nature we court calamity. I have elsewhere compared those who fight with nature to Sisyphus, who, according to the old mythology, was condemned in the lower world to a never-ending contest with the force of gravity—

> With many a weary sigh and many a groan,
> Up the high hill he heaves a huge round stone:
> The huge round stone resulting with a bound,
> Thunders impetuous down, and smokes along the ground.

By means of great expenditure of time and money, we may wage for a period with nature a war which may be apparently successful. The war can never be really successful, it will never terminate; nature in the end will assert her eternal sway, and crushing defeat must be our lot.

As the inevitable destiny of putrescible matter is to become the food of vegetables, a destiny which we can delay at the most only for a brief period, our proper course in dealing with it is clearly not to attempt to prevent or even to delay the inevitable. Such a course is to disobey the laws of nature, to fight with her, and court ultimate defeat. Our wiser plan is to help nature in her work, and thus win her smiles. It has been the wise custom in all ages of the world to dispose of putrescible matter by burial in the earth. Dead bodies have in all ages been buried, and the greatest of all lawgivers and sanitarians, Moses, whose likeness rightly takes the place of honour in this room, gave most explicit directions that excremental matters should be treated in the same way. This is a not unimportant fact, and although we do not in this country follow the whole of the Mosaic law, nevertheless that law is so pregnant with marvellous wisdom that we ought not to discard any item of it without first questioning ourselves most strictly as to our reasonableness in so doing. The latest advances of modern science seem to show that in this particular Moses was absolutely in the right.

It has been shown, I think, conclusively that the decomposition of organic matter, whether in the earth, air, or water, is brought about by minute fungoid organisms, the growth of which has the effect of resolving the highly complex organic compounds into soluble salts or gaseous bodies, which can be absorbed by the roots of plants. Now, when putrescible matter is buried in the earth, it undergoes decomposition without the occurrence of putrefaction—that process which is at once offensive to the senses and dangerous to health. This is effected by means, mainly it is supposed, of mould fungi, which produce oxidation of the organic bodies. If sufficient air has access to the pores of the soil, and if sufficient moisture be present, the nitrogen takes oxygen to form nitric acid, which, combining with the bases, forms soluble nitrates, and the carbon also combining with the oxygen forms carbonic acid, which, combining with the bases, forms carbonates. The best account which I have been able to find of the active organisms which are ever present in the soil is in a paper by Professor Wollny[1] of Munich, which was brought to my knowledge by my friend, Dr. E. F. Willoughby. These organisms are so incalculably numerous that their activity must be exceedingly widespread. Koch found enormous quantities, even in winter, in the soil not only of crowded places like Berlin, but in that also of remote fields. At the observatory of Mount Souris 750,000 were found in a gramme of earth, and at Genevilliers from 850 to 900,000.

If the action of the microbes be checked by antiseptics, the vapour of chloroform, or heat (100° C.), the chemical changes in the earth cease. That the formation of nitrates and carbonic acid from organic matter in earth to which air has access is due to microbes has been proved by direct experiment. When, however, organic matter is mixed with earth, and air is admitted in sufficient quantity or entirely excluded, the decomposition is of another kind; and, besides small quantities of carbonic acid and carburetted hydrogen, there is formed water, ammonia, free nitrogen, and a great quantity of a black carbonaceous peat-like matter (the so-called sour humus). Schlösing found that the nitric acid in the soil disappeared when the air was replaced by nitrogen. The kind of organism seems to vary with circumstances. As long as air is freely admitted, the mould-fungi (*Schimmelpilze*) preponderate; and when air is excluded, the schizomycetes (*Spaltpilze*) increase. The formation of nitric acid in organic earth mixtures depends on the amount of oxygen which is present in the air admitted. Thus Schlösing found by experiment that the formation of nitric acid varies as under:—

	Per cent.								
Oxygen	1·5	...	6	...	11	...	16	...	21
	Milligrammes.								
Nitric acid...	45·7	...	95·7	...	132·5	...	240·6	...	102·6

The nitrification which took place with a limited supply of oxygen was due probably to the air already mixed with the earth before the experiment began.

Millor and Boussingault have shown that no nitrification takes place in thoroughly soaked earth to which little air has access, and that when oxygen is absent the nitrates in the earth are reduced. The formation of carbonic acid also depends upon the admission of air (containing free oxygen), but some carbonic acid is formed even though all air be excluded.

	Per cent.				
Oxygen in air	6	...	11	...	18 ... 21
	Milligrammes.				
	Pure N.				
Carbonic acid	9·3	...	15·9	...	16 ... 16·6 ... 16

Nitrification is assisted by a moderate amount of moisture. It attains its maximum when the moisture reaches 33 per cent., and above and below this the process of nitrification and formation of carbonic acid is hindered. Temperature has a great influence on oxidation in the earth. It reaches a maximum, with a temperature of about 50° C. (120° F.), and stops at 55°. Oxidation goes on most quickly in the dark.

Thus, oxidation depends not only on the presence of the organisms, but also on the presence of other factors, such as suitable aeration, suitable moisture, suitable temperature. These factors may all be suitable, or some may suit and others may not suit the oxidation process. The decomposition of organic matter in the soil is governed by that factor which is at its minimum.

The process of decomposition is much influenced by the physical condition of the soil, as, e.g.—(*a*) permeability for

[1] Ueber die Thätigkeit niederer Organismen im Boden: Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege, vol. xv., 1883, p. 705.

air and water, (*b*) nature and permeability of subsoil, (*c*) slope, (*d*) aspect, (*e*) warmth dependent on aspect, mineral composition, colour and moisture and nature of the crop. Barren soils are warm, while those covered with green crops are cool. That the variations of the ground water have a bearing on the oxidation processes cannot be doubted, when we reflect that the soaking of the upper layers of the earth is much influenced by the height of the ground water. When all the layers of earth are soaked, putrefactive processes, through the medium of schizomycetes, take place. When the ground water falls, and the air again enters the pores of the soil, the growth of those organisms is favoured which assist in the oxidation of the soil. All changes which organic matter undergoes in the earth are thus seen to be brought about, almost exclusively, by the life of lower organisms, the activity of which is ruled by the same natural laws which govern the growth of higher plants. There can be no better illustration of the true economy of nature than this action of the microbes in the soil on the conversion of organic matter into soluble salts and gases which serve as food for plants.

The growth of the microbes depends upon the concurrence of those conditions which by experience we all know to be favourable to the growth of higher plants. There must be a good supply of free oxygen, sufficient, but not too much, moisture, and a summer temperature. In well-tilled ground, broken up so as to admit air to its pores, and in a "fine growing season," in which sunshine alternates with showers, this process of oxidation is at its maximum. The microbes are active beneath the surface, manufacturing plant food from organic matter, and the favourable conditions above soil and below cause a vigorous growth of crops. When, on the other hand, the weather is unfavourable, and when, in consequence of excessive cold, excessive drought, or excessive wet, crops are not developed as they should be, the microbial life is also checked, and the change of the organic matter is delayed, and it is stored up for future use in more favourable seasons. This is the explanation apparently of the fact well known to farmers, that the effect of organic manures is more permanent than that of the so-called artificial manures which at present are so much in vogue. The organic manure remains entangled in the soil, and is not readily washed out of it in winter when the temperature is low, or even in unpropitious summers. It cannot be washed out until microbial growth has changed it into soluble salts; and when this change takes place, which it does in "good" weather, the roots of the growing plants seize hold of the ever-forming soluble salts and appropriate them to their own use. In fact, the farmer who uses organic manures, from the farmyard or elsewhere, need trouble himself very little with agricultural chemistry or experiment. He may feel certain that if he buries his organic manure *directly it is produced*, it will not be wasted. It will not give off ammonia to the air, nor will the juices be washed away by rain to the same extent as when it is left above ground to be a nuisance. There seems to be no doubt whatever that all heaps of manurial matter which give off ammonia and other gases to poison the air, and perhaps do more serious mischief which we "know not of," are allowing valuable matter to escape, which ought to be undergoing oxidation in the earth. There can be no doubt whatever that to the agriculturist stink means waste; and it is to be hoped that when the bucolic mind has imbibed this great and important truth, the country will be more evenly pleasant than it is.

The reason why farmers allow putrescible matter to fester in heaps appears to be, (1) that the matter has to wait until land is clear and circumstances permit of its being dragged to the fields; and (2) that when the matter is thoroughly rotten and most offensive, a more rapid and visible result is produced, notwithstanding that the total result is probably less than if the matter had been applied to the ground at once. It is certain that putrescible matter intended for manure must waste more above ground than when buried immediately beneath it. Rich farmers are now building sheds over their yards to prevent the access of rain to the manure, and are providing tanks for the reception of liquid which drains away. This involves a very great expense, and it is at least doubtful whether the result is better than that got by the immediate application of such matters to the soil—a process which involves no extra expenditure of any kind,—a most important matter, because the only acceptable test of good husbandry is the balance sheet. Mr. Warington, F.R.S., in his valuable little book on "The Chemistry of the Farm," says: "The most complete return to the land would be accomplished by manuring it with the excrements of the men and animals consuming the crops" (p. 28); and again, "Farmyard manure is a 'general' manure; that is it supplies all the essential elements of plant food. ..... The effect of farmyard manure is spread over a considerable number of years, its nitrogen being chiefly present, not as ammonia, but in the form of carbonaceous compounds, which decompose but slowly in the soil." The immediate return is often less than when artificial manure, consisting of soluble nitrates and phosphates, is used; but the important point seems to be that the return is tolerably sure to come in the long run.

The late Prof. Voelcker, in the article "Manure" in the Encyclopædia Britannica, gives an interesting table of the experiments of Sir John Lawes and Dr. Gilbert, spreading over a period of twenty-four years, in which is shown the effect of different manures on crops. The most successful results with artificial manure were got by applying nearly 1400 lb. weight per acre of mixed ammonia salts, superphosphate, and sulphates (potash, soda, and magnesia). With this manure there was an average production of 37½ bushels of wheat, weighing on an average 59 lb. per bushel, and multiplying these two figures together we may say that the production of wheat averaged 2212·5 lb. The production of barley averaged 41¼ bushels, weighing 53⅜ lb., and multiplying these figures we may say that the average production was 2588 lb. Where the land was manured with fourteen tons of farmyard manure the average production of wheat was 35¼ bushels, weighing 60 lb., giving a figure of 2115 lb., and of barley 48¾ bushels, weighing 54⅜ lb., giving a figure of 2650 lb.

Thus farmyard manure, when used for wheat growing, gave a yield of 97 lb. less than when the best artificial manure was used, and when used for barley growing it gave 62 lb. more than when artificial manure was used. These figures are certainly not such as should discourage us in the use of farmyard manure, especially when we remember that the average agriculturist is not likely to apply his artificial manures with the knowledge and judgment of Messrs. Lawes and Gilbert, and that in the use of farmyard manure it is not easy for him to go very wrong. Again, farmyard manure is stuff which *must* be used, while chemicals are things which *must* be bought, and need to be analysed when bought.

It is a great mistake to suppose that farming is in any way comparable to a chemical experiment. In experiments conducted in the laboratory the chemist is able to control *all* the conditions of the experiment; but in farming the condition which above all others influences the result—viz., the weather—cannot be controlled. When chemical manures are used with judgment and applied at the right moment, and when the weather is favourable, there is no doubt that the result is often surprising and gratifying. When, however, the weather is unfavourable, when the drought is so great that the chemicals cannot be dissolved, or when the rain is so heavy that they are washed out of the soil, the result is not encouraging. If organic manures are used, they do not waste in bad seasons, and much remains in the ground for next year's crop. The farmer, however, who applies chemicals in a bad season gets neither crop nor residuum of manure for next year. Mr. Warington says that "farmers have a prejudice in favour of the latter (i.e., organic) manures, but it is clear that the quickest return for capital invested is afforded by the former class" (i.e., inorganic). Surely we have no right to blame the farmers for their prejudice, which seems to be in all respects reasonable. The doctrine has obtained in this country of late years that it is good economy to waste all our home-grown organic manure, and to import chemicals from South America for the purposes of agriculture. This is a strange doctrine; but as most of our farmers are now too near bankruptcy to pursue this course, we may hope that ere long they will begin to clamour for that which we now waste so wickedly.

One more word before I bring my remarks on farming to a close—remarks for which I make no apology, for I feel sure you must already recognise their bearing on the subject of sanitation. The remark I have to make is this, that in the hands of Lawes and Gilbert farmyard manure gave better results with barley than with wheat. May not the fact that farm animals are largely fed with barley meal have something to do with this? There are experiments which show that minimal ingredients in manures are not without effects which are often surprising. There are *a priori*

grounds for thinking that the best manure for barley must be the excrement of a barley-eating animal, for in that excrement must be all that is necessary for barley. I wish some agriculturist would make the experiment of growing wheat with the excrement of a wheat-eating or bread-eating animal. As a gardener I have grown potatoes with the excrement of a potato-eating animal, and certainly the result has been most encouraging.

I have been obliged to draw my illustrations as to the practical result of burying organic matter from the agricultural employment of farmyard manure, because facts based upon exact experiments with the organic refuse of our towns is not forthcoming. *What I want to insist upon is this, that the proper destiny of organic refuse is immediate burial just below the surface of the soil.*

Most of the shortcomings of modern sanitary methods are due to the fact that in our dealing with organic refuse we commit a scientific error—i.e., we pursue a course which is in opposition to natural law. This error consists in mixing organic refuse with water. When organic refuse is mixed with water, it undergoes changes which differ widely from the changes which it undergoes when mixed with earth. According to Wollny, whose paper I have quoted previously, the process of oxidation of organic matter and the formation of nitrate takes place most readily when a moderate amount of moisture is present. The most favourable amount is about 33 per cent., and if the moisture rise above or sink below this amount, the process of nitrification and the formation of carbonic acid is hindered. When water is in excess the amount of free oxygen is insufficient to favour the growth of mould fungi, the schizomycetes (bacteria and micrococci) are formed, and, in place of oxidation, putrefaction occurs, with the formation of ammonia, free nitrogen, carbonic acid, and carburetted hydrogen. Under these unfavourable circumstances it is possible that the nitrates which may have been formed may be again reduced. This process of deoxidation takes place in mixtures of putrescible matter with water, and takes place also, it is said, in soil which is thoroughly soaked with sewage—i.e., putrescible matter mixed with water. In the face of these facts it is not to be wondered at that "sewage farming," which is farming under acknowledged difficulties, has not proved a commercial success. We must indeed be in doubt whether, when the circumstances are more than usually unfavourable, it exercises any very great purifying action upon the putrescible mixture. In the treatment of putrescible refuse, so that it shall not be a danger or annoyance, what we have to aim at is nitrification rather than putrefaction, and it is certain that by mixing with water putrefaction is encouraged and nitrification delayed.

It seems to be almost incontestable that the proper course to pursue with regard to organic refuse—putrescible matter—is the very reverse of that which we do pursue. We clearly ought to encourage oxidation and make putrefaction impossible. Putrefaction is certainly a great cause of ill-health. It was the putrefaction of wounds (now, happily, almost unknown) which converted our hospitals into something little better than charnel-houses. It is the putrefaction of organic refuse mixed with water in cesspools and sewers that causes that long list of ailments which we ascribe to the inhalation of sewer air. The opinion is held by many that the dejecta of typhoid patients and cholera patients do not become dangerous to others until putrefaction has set in, and such an acute observer as was the late Dr. Murchison held the opinion that common putrefactive changes taking place in dejecta were a sufficient cause of typhoid, independently of the admixture of any specific poison.

The putrefaction of organic refuse, when mixed with water, has, I think, been the chief cause of the development of modern sanitary "progress." Our forefathers were not given to this method of treating putrescible matter. House-slops trickled along open gutters, and excremental matters were deposited in dry pits. At the beginning of this century the watercloset came into use. Mr. W. Haywood, quoted by Dr. Farr, says, "Waterclosets were invented about 1813, and became general in the better class of houses about 1828-33. The custom at first obtained of building cesspools having overflow drains put below their doming, by which means the solid matters were retained and the supernatant liquid only ran off. In the year 1849 what may be said to be an organic change in the system took place. In 1848 the City Commission of Sewers obtained its Act for sanitary purposes, which became operative on Jan. 1st, 1849, and then for the first time was discharge into the sewers legalised. Previously a penalty might have been enforced for such a usage of them, but henceforth, within the City of London, those incurred a penalty who failed, upon notice, to construct the drainage of premises in such a manner as not to discharge all waste waters *and fæcal matters directly into the public sewers* [i.e., directly into the sources of water supply], of which the full utility was, therefore, for the first time recognised by statute. This Act was speedily followed by others for the remaining area of the metropolis and for the entire country." "It will be noticed," says Dr. Farr, "that the deaths from cholera and diarrhœa increased in London in 1842, increased still more in 1846, when the potato crop was blighted, and in 1849 culminated in the epidemic of cholera." Dr. Farr says further, "a system of sewerage is the necessary complement of a water-supply. ..... Almost coincidently with the first appearance of epidemic cholera, and with the striking increase of diarrhœa in England, was the introduction into general use of the watercloset system, which had the advantage of carrying night soil out of the houses, but the incidental and not necessary disadvantage of discharging it into the rivers from which the water supply was drawn."

Mortality per 1000 from diarrhœa in London (Dr. Farr).

1838	·215	1853	1·011
1839	·201	1854	1·257
1840	·238	1855	·804
1841	·238	1856	·866
1842	·353	1857	1·181
1843	·410	1858	·759
1844	·340	1859	1·211
1845	·397	1860	·496
1846	·997	1861	·928
1847	·898	1862	·607
1848	·853	1863	·821
1849	1·705	1864	·981
1850	·813	1865	1·206
1851	1·085	1866	1·306
1852	·983	1871-80—Dr. Ogle	·940

Thus in the decade 1871-80, 33,168 persons died of diarrhœa in London, the death-rate from this cause being ·94. If the death-rate of 1838 (·215) had obtained in the decade 1871-80, the deaths from this cause would have numbered only 7600, and there would have been a saving of 25,568 lives.

Since the introduction of the watercloset, and I believe as a direct consequence of it, we have had four severe epidemics of cholera (a disease not previously known), and enteric or typhoid fever (previously almost or quite unrecognised) has risen to the place of first importance among fevers in this country. The evils which have arisen from cesspools and sewers have caused an enormous amount of attention to be devoted to what are known as "sanitary appliances," sewer constructions, &c., and so great and so well recognised are the evils of sewers that many of our friends are anxious that we should be compelled by Act of Parliament to protect ourselves from the mischief which previous Acts of Parliament have produced.

Not only does the putrefaction of organic refuse tend to fill the air of our houses and towns with foulness, but this mixture of organic matter with water is attended with other bad consequences. This arises from the fact that much of the organic matter which we mix with water is distinctly poisonous. The zymotic theory of disease has of late years assumed more definite shape, so that we may now leave what was called the zymotic theory and consider the actual facts. There is no doubt that the actual infective elements of many zymotic maladies consist of microbes, fungoid bodies belonging to the class of fungi known as schizomycetes, that class which grows in organic mixtures where insufficient free oxygen is present. These microbes are infinitely small; millions of them may live in a cubic inch of putrefying liquid. Under favourable circumstances they will live for long periods. They will not only live, but multiply, and it is at least a question, and a grave one, to what extent these infective germs undergo an increase when mixed with organic liquids such as sewage or milk.

The fact that the zymotic poisons are *particulate and alive* is one which has most important bearings on the subject under discussion. If the poison were a chemical poison, then dilution would practically do away with its power for harm. No amount of dilution is capable of destroying a zymotic poison; in fact, it is not impossible

that the mere mixing of organic refuse which contains a zymotic poison with water may be the means of keeping it alive, and possibly causing it to multiply. When a mass of organic matter, charged with zymotic particles, is mixed with water and washed out of a house, the water will carry the poison with it wherever it may chance to flow or trickle, to watercourse, well, or any other source of drinking water; in fact, the dissemination is as perfectly and thoroughly done as if dissemination of poison were the main object which we had in view. When dealing with organic matter impregnated with zymotic poisons, mere dilution with water increases rather than diminishes the danger. As long as the poisonous organic refuse is concentrated, its repellent qualities are such that there is little chance of its gaining access to the human body. The microbes contained in it are theoretically capable of infecting an almost indefinite quantity of water, and this large quantity of water masks the repellent qualities of the stuff, and thus the danger of infection is greatly increased.

This dissemination of poison by water is one of which we have had very bitter experience in this country. There is little room for doubt that, in this country at least, water has been the great carrier and disseminator of the poison of cholera. In 1849 the mortality was highest in those districts getting their water-supply from the Thames between Battersea and Waterloo Bridge. In 1853-54 the same phenomena were observed. In 1866 the chief mortality was in the district supplied with water taken from the river Lea. With regard to this latter epidemic we are in possession of many details, and the following is a summary of the facts, as given by the late Dr. William Farr in his report on the cholera epidemic of 1866:—"Several cases of cholera and choleraic diarrhœa had occurred over London in May; and on June 27th, at 12, Priory-street, Bromley, one poor Hedges, a labourer, and his wife, both of the age of forty-six years, died of 'cholera Asiatica,' the former after fifteen, the latter after twelve hours' illness. These cases are minutely described by Mr. Radcliffe, who traces the discharges into a water-closet of 12, Priory-street, and thence 300 yards down the sewer into the Lea (a tidal river which ebbs and flows) at Bow Bridge, half a mile below the Old Ford reservoirs. He attaches great importance to these first cases, and they undoubtedly sufficed to pour into the sewers and waters millions of zymotic molecules, which day by day grew more and more frequent in the Lea by every hour's choleraic discharges on both sides of the river." A few days later water was supplied to the district from a reservoir, the bottom of which was pervious to the waters of the Lea, and then resulted an outbreak of cholera and diarrhœa which resulted in the death of over 4000 persons.

I need not give further instances of the dissemination of disease by water-carried sewage; sanitary literature is full of them. What is true of cholera is also true of typhoid, and I will only say in reference to this subject that (if we accept, as we are bound to do, the statements put forward with regard to the cholera epidemic of 1866) if the excreta of the Hedges' family had been buried or burnt, the waters of the Lea would not have been infected, and possibly 4000 lives would have been saved.

The first principle in dealing with epidemic disease is that which is expressed in the words *Principiis obsta* (Resist the beginnings). The object of this is evident, and is well expressed by Shakspeare in the words—

> "A little fire is quickly trodden out,
> Which, being suffered, rivers cannot quench."

The mixing with water may be looked upon certainly not as a resistance of the beginnings, but rather as a nursing and favouring of them, which, "being suffered," most certainly "rivers cannot quench." The great principle of *principiis obsta* has been most rigidly observed by surgeons in dealing with those forms of blood poisoning which arise in connexion with wounds, and which were known as hospital diseases. To Lister belongs the credit of recognising that the great thing to be aimed at was the checking of putrefactive changes in the discharges from the wound, an end which has been attained by adopting what are known as antiseptic precautions in the treatment and dressing of wounds. A foul wound is looked upon as a great source of danger to the patient himself, and formerly the poisons generated in the wound of one patient were carried by sponges and instruments (which, be it remembered, were *clean* as far as any indications appreciable by our unaided senses were concerned) to the wounds of others; and thus it followed that the mortality from what was wrongly spoken of as "hospitalism" was enormous. Now, however, putrefaction in wounds is practically at an end, owing to the use of antiseptics and to an improved appreciation of what cleanliness really means; and, as a result of this, hospitalism has disappeared.

How marvellous have been the results which have followed on the adoption of the principle of preventing putrefaction in wounds is well shown in a table given in the last edition of "Erichsen's Surgery." This table is taken from a statistical work by Max Schede on amputations, and shows conclusively what are the advantages of antiseptic precautions. I have simplified his statement for the sake of those of my audience who are not acquainted with medicine.

Uncomplicated Cases of Amputation.

Cause of death.	Old treatment, 377 cases.	Antiseptic treatment, 321 cases.
Blood poisoning.....	105	3

Thus it appears that the mortality from blood poisoning under the old treatment was 28 per cent., while under antiseptic precautions it is less than 1 per cent. Antiseptic measures are used in other than purely surgical cases, and my friend, Dr. John Williams, tells me that since their introduction into the General Lying-in Hospital the deaths from that terrible disease "puerperal fever" have practically ceased. This great result has been brought about by attention to the leading principle of *principiis obsta*. In my student days the treatment most in vogue for wounds was "pure" water; but now it is recognised that water is preeminently the encourager, and sometimes the main cause, of putrefaction, which of all things the surgeon tries to avoid.

The foulness of our rivers is largely due to the mixing of putrescible matter with water—i.e., to water-carried sewage; and there can be no doubt that as water-carried sewage increases, the difficulty of obtaining pure water increases also. Water-carried sewage so fouled the Thames "between the bridges," that after the bitter experiences of 1854, the intake of the water companies was moved to a point above the tideway. Since then the population all along the Thames valley has enormously increased, and if we who get our drinking water from the Thames escape disease, it can only be regarded as due to a happy accident, and not to the observance of any fixed principle to effectually prevent the fouling of the river. The precious liquid with which I am supplied from the Thames costs me, I think, nearly 10*s.* per 1000 gallons, and I need not say that I am very careful to have every drop which is used for drinking purposes both boiled and filtered.

If sewage finds its way to a water source, I have not much faith in the various modes of "treatment" which it undergoes in those establishments which local boards love to erect for this expensive amusement. The addition of chemicals, if in sufficient quantity to destroy living organisms, must make the water still more unpotable than before, and can only be of use by making the liquid so utterly nauseous that to drink it would be impossible. Mere filtration cannot be regarded as any safeguard after the experience of the Lausen typhoid epidemic, in which the poison of the fever filtered through a mile of earth, which was sufficient to check the passage of particles of wheat flour. Wide irrigation over a large area of land, as is practised in "sewage farming," is probably the best method of treating sewage, but this cannot be regarded as absolutely safe under all conditions, for reasons previously indicated. If antiseptics have been previously added to the sewage this must increase the difficulties of "farming" with it; as, if the antiseptics have been added in sufficient quantity to destroy disease organisms, this would effectually check the growth of those organisms upon which the fertility of the soil depends.

It is more than doubtful whether there is any absolute safety in obtaining water from deep wells. The Dudlow-lane well, near Liverpool, having a total depth of 443 feet, was fouled by percolation from cesspools, and percolation from a defective sewer would certainly prove equally disastrous. Surface wells are now not regarded as at all safe, but our suspicions with regard to them were not aroused until after the introduction of the plan of mixing water with putrescible matter. There was no soakage from an old-fashioned dry pit. There must be soakage from a cesspool or "dead well." The only way of securing pure water is to make quite sure that there is no fouling of water sources. If this were done, then pure water would be at

once plentiful and cheap. It is now very dear, and is getting scarcer every day. Dr. Wm. Farr said, "a system of sewerage is the necessary complement of a water supply." For myself I should be inclined to say that an extraordinary water supply is the necessary complement of water-carried sewage, because with it our ordinary supplies quickly get fouled. In London we have effectually fouled all our wells, and the state of the Thames is such that a man must be in the very extremities of thirst, or else insane, before he would drink from the Thames anywhere between Teddington Lock and Gravesend. The state of our noble river is a deep reproach to us, and must remind us day by day of the serious blunders we have committed. As long as it remains as it is we certainly have no claim to be followed as an example in matters sanitary. London should serve as a warning, as did the drunken helot to the Spartan youth.

The fouling of our sources of water supply has driven us far afield for water, and this no doubt has been a great cause of the lessening of our mortality of late years; but it would be unwise to talk of security because we have had no serious epidemic since 1866, an absurdly short period in the history of a nation. It must not be forgotten that pure water is as necessary for animals as it is for man, and that if we persist in fouling our rivers the poor farmer may have to pay a "water rate" for providing an artificial water supply for his horses, cattle, sheep, and even poultry. Many diseases of animals are communicable to man, and it is daily becoming more evident that our health is very intimately bound up with the health of our animals, and that their sanitary condition is scarcely less important than our own.

From a financial point of view, water-carried sewage has not been encouraging. It has increased the rates, increased the cost of our houses, and put us to great expense for water. The "treatment" of sewage before it is finally discharged into our rivers is everywhere an expense and nowhere a source of profit, and we find that public sewers which cost millions, cost thousands to keep them in repair. The sewers we have built with borrowed capital. We have seized all the glory and patronage of disbursing enormous sums, and have left posterity to pay the bills. This is a doubtful policy, and I think a most immoral one; but I feel it is little use to raise my feeble voice against the custom, which is now so much encouraged, of hanging a debt round the neck of our successors. It may be defensible to raise a loan for building town halls, schools, and similar edifices, of which posterity will reap the benefit; but to raise loans for the purpose of wasting most valuable fertilising matter by means of works which will be a constant expense, and never a source of profit, is a very doubtful expedient. I hope the custom will soon obtain of compelling each generation to bear the charge of its own sanitary experiments—and blunders.

Sewers are constant sources of impoverishment to the soil, and the soil, be it remembered, is the only *permanent* and reliable source of wealth in any country. The waste of valuable matter which takes place in London and our big towns must make us blush. I wish the waste were limited to our big towns, but it is not so. It is common throughout the country, even in rural districts. Free trade has made food very cheap indeed, and cheap food, especially *imported* food, ought absolutely to increase the fertility of a country, for obvious reasons which I need not particularise. The fertility of this country is not increasing, to judge by the agricultural distress. The farmers are crying out for "protection." The first kind of protection needed seems to me to be a protection from ourselves and from the sinful waste of fertilising matters which local boards, municipalities, and Imperial Parliament equally foster. If we made a proper use of our organic refuse we should enrich posterity. As it is, we reap and we do not sow. If municipalities would bury organic refuse, and plant the seed of some forest tree suited to the soil and situation (which in these days of cheap food stuffs would probably be the best branch of agriculture to pursue), they would earn the blessings, instead of the curses, of posterity; and they would beautify the face of nature, instead of making it hideous with tall chimneys, pumping stations, and precipitating tanks. This piece of advice will, I fear, fall very flat, for of all agricultural arts, forestry seems the deadest in this country.

As a defence for gigantic sewage schemes, it is often said that you can do nothing well without co-operation, and this is the excuse for compelling all, whether they want them or not, to contribute towards the cost of sewers. If co-operation be for a good end, the result is a great good; but if co-operation be for a bad purpose, the result is a great evil. I need say no more.

The last charge which I have to bring against water-carried sewage is a serious one—viz., that it encourages overcrowding in cities, which is universally admitted to be the greatest of all sanitary evils, and one which cannot be counterbalanced. Water-carried sewage encourages overcrowding, because it enables us to build houses with no outlet except a hole for the sewage to run through. The growth of London must be a source of alarm to sanitarians, and it is impossible not to admit that our system of sewers has been a most important factor in its production. Look at Charing-cross, where a street of gigantic clubs and hotels has arisen, each without curtilage of any kind, and where a handsome profit has been made by setting the first law of sanitation at defiance. You will find the same thing to a greater or less extent throughout the metropolitan area. It is difficult to say why we are so prone to crowd into cities. In former days we crowded behind walls as a protection from our enemies. Those days are at an end, but the crowding is greater than ever. The common cant of the day is that in this nineteeth century we have annihilated time and space. Certainly in cities both are excessively precious. The telegraph, the telephone, and the steam engine ought to have diminished overcrowding, but they have not. The stream is still mainly from the country towards the town, the attraction being the making of money and the spending of it.

It may be well to glance at the effect of this overcrowding in this city. It is a common remark that London is a very healthy city, and as a proof of this assertion persons point to the death-rate, which certainly of late has not been excessive. The London of the Registrar-General, however, is a very extensive place, and many of the outlying parts are almost rural in character, so that if you want to find the effect of living in a crowded city it is not fair to take London as a whole. I am no believer in the healthiness of London. It is true that our death-rate has not been raised by any great epidemic of late years, but London is undoubtedly a city where an abundance of second-rate health exists. The crowds that throng the doors of hospitals increase, and in my profession there is a great outcry about "hospital abuse"—which means, I take it, that decent folk are not able to cope with the amount of chronic disorders with which they are beset. Again, the mobility of the population in the present day makes our vital statistics very uncertain. Many a healthy person is imported into London, and, being wounded in the battle of life, returns to the country to die or recover as the case may be. There is a scarcity of very young and very old people, and in order to appreciate the vital statistics of London great allowances have to be made for the abnormal age distributions.

In order to judge of the effect of overcrowding, let us look at the vital statistics of the Strand Registration District, which is about the centre of London, and from which one would have to walk very many miles to reach the country in any direction. The Strand enjoys many advantages. It is mainly a wealthy district, extending in irregular form from Temple Bar to Buckingham Palace. It includes the whole of the Green Park and half St. James's Park. It has a gravel soil, and slopes gently, with exposure to the south, to the fringe of (potentially) the noblest river in the country. The worst and poorest parts are at the north-east corner. I have compiled a table from the last nine quarter-year tables which have appeared in the *British Medical Journal*, so that I am able to compare the Strand with the whole of London (for nine quarters) and with Dorset (for ten years, 1871-80).

—	Birth-rate.	Death-rate.	Zymotic death-rate.	Deaths under 1 year to 1000 births.
London	32·5	19·9	2·7	151
Strand and St. Martin's-in-the-Fields	23·7	21·8	2·6	192
Dorset (10 years 1871-80) ...	29·53	17·46	1·68	108

I have chosen the county of Dorset for comparison because it is a "healthy district," and if we are to do any good we must always aim at a high standard. Again, the Dorset-

shire labourer has always been a favourite stalking-horse for cockney politicians, and it may be well to show how much healthier he is than the Londoner, notwithstanding his supposed condition of chronic starvation. This table is very interesting. Dr. Letheby said, "A high death-rate means a high birth-rate, and a high birth-rate is the invariable concomitant of prosperity." This dictum does not evidently apply to the Strand. Dr. Farr, on the other hand, pointed out that "a low birth-rate implies a small proportion of young adults and a large proportion of the aged." This dictum, again, does not apply to the Strand, as we shall see by a reference to the next table, in which I have endeavoured to make corrections for the abnormal age distribution which obtains in that district, and which Dr. W. Ogle rightly insists is absolutely necessary before you can arrive at just conclusions.

The Strand. Mean population 1871-80 = 37,461.

Ages.	Actual numbers living at each age.	Normal age distribution for a population of 37,500.	Difference (+ and −) between actual and "normal" numbers.	Actual deaths in 10 years, 1871-80.	Deaths which would have happened had the distribution of ages been normal.	Death-rate at different ages.	Death-rate of Dorset.	Deaths which would have happened had the death-rate of Dorset obtained in the Strand.
Under 5	3597	5100	−1503	3596	5100	99·97	40·07	1440
5—10	3134	4500	−1366	390	548	12·44	4·31	129
10—15	3069	4012	− 943	163	212	5·31	2·79	84
15—20	3824	3640	+ 190	317	299	8·29	4·43	167
20—25	4426	3337	+1089	386	273	8·27	6·65	290
25—35	6773	5512	+1261	963	770	14·22	7·50	510
35—45	5121	4237	+ 884	1246	1009	24·33	10·48	525
45—55	3935	3225	+ 710	1338	1088	34·00	13·04	520
55—65	2311	2212	+ 99	1147	1100	49·63	24·56	565
65—75	1003	1237	− 234	754	900	75·17	55·28	559
75 & over	268	487	− 219	425	774	158·58	151·71	403
	37461	37500		10705	12074			5203

From this table it appears that there was in the Strand during the decade 1871-80 a deficit of 3812 children under fifteen, and of 453 of persons over sixty-five, while there was a surplus of 4233 persons between fifteen and sixty-five. This abnormal distribution ought, according to Dr. Farr, to give us a high birth-rate and a low death-rate. The very reverse is the case, and a critical examination of the figures seems to show that the death-rate in the Strand *is more than double what it is in Dorsetshire.* It may be said that this high death-rate is due to the presence in the Strand of two hospitals (Charing-cross and King's College), and doubtless these have some material effect in producing the terrible adult mortality. Hospitals, however, are generally placed where they are most needed, and I would point out that these institutions can hardly account for the enormous infant mortality; and certainly not for the deaths of infants under one year. Against the fact that the Strand contains two hospitals is to be placed the not less important fact that it contains no workhouse. This institution is at Edmonton, where it helped to raise the death-rate from 15·8 to 16·9.

It need not surprise us that a population situated in the very centre of the vastest city the world has ever seen should have a high death-rate, and it may be well to look to the causes of death and again to compare the rates from different causes with those in Dorsetshire.

Death-rate from different causes.

	Strand.	Dorsetshire.
Whooping-cough	0·62	0·29
Tabes	0·28	0·18
Phthisis	3·65	1·72
Hydrocephalus	0·61	0·22
Respiratory disease	5·92	3·15
Total of tuberc. and resp. disease	11·08	5·56
Small-pox	0·11	0·09
Measles	0·36	0·20
Scarlet fever	0·49	0·33
Enteric	0·38	0·19
Violence	1·61	0·49
Diarrhœa	0·92	0·35

No good would be got by extending this table. Suffice it to say that there is no single cause of death in the Registrar-General's tables which is not more active in the Strand than it is in Dorsetshire. I would particularly draw attention to the fact that the death-rate for whooping-cough and tubercular and respiratory disease for the Strand is more than double that of Dorsetshire—a fact which is not to be wondered at in a population the bulk of whom only breathe pure air upon the rarest occasions, and who habitually breathe an air so foul that the sun often fails to penetrate it, and which is fatal to almost all flowers and a large proportion of trees. To me one of the saddest indications of the dismal state of this overgrown city is the appeal, which is now so common in the newspapers, for funds to give poor London children *one* day in the country, with of course the not immaterial deduction of the hours spent in going and returning.

These tables may serve to dispel another popular fallacy—viz., that the sulphur-laden air of London has antiseptic powers, and helps to check zymotic disease. As a fact, those zymotic diseases which presumably travel through the air (small-pox, whooping-cough, and measles) are particularly rife in London. The death-rate from these three causes was during 1871-80—

	In London.	Dorsetshire.
Small-pox	0·44	0·09
Measles	0·51	0·20
Whooping-cough	0·81	0·29
	1·76	0·58

In fact, the mortality caused probably by air-borne germs was exactly three times as great in London as in the healthy country district which I have chosen for comparison.

I have endeavoured to show that the admixture of water with putrescible matter is inadmissible—(1) because it is antagonistic to a law of nature, and there can be no successful antagonism to nature; (2) because the putrefaction set up in cesspools and sewers by mixing water with putrescible matter has been a direct cause of much disease; (3) because the practice involves the most perfect dissemination of disease particles, and involves a neglect of the great principle *principiis obsta;* (4) because it is the great cause of the fouling of rivers and wells, and makes the obtaining of pure water increasingly difficult; (5) because it is financially and economically disastrous, crippling the ratepayers, and exhausting the land; (6) because it is one of the chief causes of overcrowding, the greatest of all sanitary evils.

It may be asked, "What useful purpose can be served by talking thus to an audience of Londoners? London is hopelessly committed to the principle of water-carried sewage, and must make the best of it." To this I reply that even London need not needlessly increase her already insurmountable difficulties, and that happily the whole of England is not yet quite absorbed into London and other cities. There is a very general belief throughout the country that because London has adopted the system of water carriage it must therefore be the best. This idea is unthinkingly adopted, and to its adoption the distinction

of borrowing and disbursing a large amount of other people's money acts as a spur. There has come within my own knowledge the case of a country town, in the midst of a poor agricultural district, which clamoured for a "sewage scheme" for the purpose of polluting its sparkling watercourse, where anglers pay large sums for the privilege of trout-fishing, its death-rate being at the time between 16 and 17 per 1000. In the Thames valley, the region of villas and market gardens, a whole crop of "sewage schemes" has lately been put forward, notwithstanding that the more rational methods of sanitation would be easier and cheaper. Only the other day I visited a lone farmhouse which a friend wished to take for the summer, and I found that the proprietor, having taken the soil-pipe of a recently erected watercloset into a cesspool alongside a deep well sunk in the chalk, had rendered his house unlettable to any thinking person; and, lastly, I recently heard of a friend who took a moor in Scotland and wished to have rational methods of sanitation, but the noble owner, bitten by the modern craze for water, would allow nothing but water carriage, and accordingly laid his filthy pipes to foul the babbling highland burn, and deprive the soil of that of which it was in need.

Again, in institutions such as workhouses, barracks, schools, and the like, water carriage is often adopted, notwithstanding the favourable conditions for rational methods. The ignorance of soldiers in this matter is an acknowledged cause of the sickness and mortality during campaigns. There seems, in short, a very great necessity for directing attention to the "shortcomings" of water-carried sewage.

What do you propose? will be the next question. My answer is fair play and no compulsion. Much as I believe in the good of spreading sanitary knowledge, I have little faith in the efficacy, and a potent belief in the dangers, of sanitary legislation, whereby blunders are stereotyped.

The first thing necessary is an equitable adjustment of sanitary rates. Borrowing for the purpose of constructing sewers should be disallowed, and those who do not need the sewers should not be called upon to contribute towards them—at least, not to the same extent as others. The present inequitable adjustment of sewer rates is a premium on jerry-built houses without curtilage. Encourage the man who has a little bit of garden to make use of it. Enforce the Pollution of Rivers Act against individuals, even against proprietors of highland moors. Let us have a real inspection of nuisances and a harassing of evil doers, and let us discourage by every means in our power the building of houses side by side, and almost back to back, with no outlet but a hole. Let water be paid for by meter.

I have every sympathy with the agitation for getting allotments for the poorer classes. The best and most economical allotment is one close to the house where refuse may be buried and in due time bring forth. Those who advocate "sewage farming" tell us that an acre is necessary for every 100 inhabitants. How infinitely better if the 100 people could absolutely live on the acre of ground in (let me say) twenty cottages, each cottage having one-twentieth of an acre. How infinitely better for the man to till this little plot in his spare time than to occupy his leisure by braying politics in a public-house.

Let us calculate the produce of this plot of ground in terms of potato. An acre of a field will produce an average crop of 7 tons; the twentieth of an acre would produce 7 cwt., or 784 lb. As these would be for home consumption, and would save the man from disbursing money at a retail shop, we may take the value at the average retail price of 1*d.* per lb., or £3 5*s.* 4*d.*, or for the sake of simplicity say £3. To give one-twentieth of an acre to every five inhabitants would make a town inconveniently big, it may be said. I think not; 100 to an acre is 64,000 to a square mile, or making a very liberal reduction for space occupied by roads, let us say 50,000 to a square mile. This does not sound like an inconvenient scattering of houses. The inhabitants would make £30,000 a year by the produce of the land, a gain of which Free Trade could not deprive them; and there would be no sewer rate, no plumbers' bills, and certainly a vast increase of health, happiness, and contentment.

What I am advocating is no utopian scheme, and I am not talking without some practical experience. A few years ago I bought twenty cottages adjoining a garden which I have in the country. Many of them had been built with a very insufficient curtilage, and their old-fashioned sanitary arrangements made the garden anything but pleasant. My first step in improving these cottages was to do away with the old-fashioned pits, which were not suited to the spot and were always full of water, and replace them by pails. The cottages are systematically scavenged every day, and all refuse, inclusive of food refuse, excrements, and ashes, are buried immediately in the garden. There has been a complete cessation of all offence, and my garden holds the proud position of being certainly one of the most fertile in the district. Roses and other flowers, and all the ordinary garden fruits and vegetables, flourish therein in great luxuriance. The æsthetic aspects of the place have been increased, and in no way diminished, by the course I have pursued. I wish it to be understood that I am no mere theorist, but that I practise what I preach.

I have dealt with this subject from rather a different point of view in a little book, "Our Duty in regard to Health," which I wrote for the Council of the Health Exhibition. Those who may care to pursue this subject further may get the book of Clowes and Co., the publishers, at Charing-cross.

ON A CASE OF

SUCCESSFUL SUTURE OF THE BLADDER, THROUGH AN ABDOMINAL INCISION AFTER TRAUMATIC RUPTURE.

BY T. HOLMES,
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THE operation of sewing up a rent in the bladder is still so novel, and has been so seldom successful, that I think the following case will be of interest in connexion with the two recently published by Sir W. Mac Cormac in THE LANCET.

Henry P——, aged twenty-four, was admitted into St. George's Hospital in the night of June 9th, 1887. He had been drinking for several days, and on the day of admission, about 7.30 P.M., in a quarrel, he received a kick in the abdomen. He had not emptied his bladder for an hour before the injury, and had been drinking freely in the interval. He felt great pain on the receipt of the kick, walked home (about a quarter of a mile), and then, as the pain did not abate, and he could not void urine, he was taken, at 9 P.M., to Dr. Powell of Battersea-park-road, who passed a gum catheter, and drew off about five ounces of blood-stained fluid; but, suspecting rupture of the bladder, sent him to the hospital. Mr. Vernon (then house surgeon) passed a silver catheter about 11.30 P.M., but drew off only about one ounce and a half of bloody fluid. I saw him about 1.30 A.M. —i.e., about six hours after the receipt of the blow. He was in great pain, but not collapsed. Examination of the abdomen showed nothing abnormal, but as the symptoms appeared to point to ruptured bladder, I decided, in consultation with Mr. Bennett, to whom I was indebted for most valuable assistance, to examine the patient under ether, with a silver catheter, with a view to abdominal section and suture, if that operation should seem called for. When first passed into the bladder the instrument drew off hardly anything, but on pressing it onwards a large quantity (more than half a pint) of blood-stained fluid was obtained, and the point of the catheter was felt nearer the umbilicus than the pubes. Judging that the catheter must be outside the bladder, the pubes being shaved and the skin washed with carbolic lotion, I made an incision in the middle line for about three inches and a half above the pubes, and deepened it gradually till the peritoneum was exposed, covering some coils of small intestine. The catheter was felt through this. The urachus was easily distinguished passing up to the umbilicus, but the position of the bladder could scarcely be defined. It seemed therefore certain that the rent was not extra-peritoneal. Accordingly the peritoneum was opened pretty freely, the intestines pushed upwards with a flat sponge, and the rent in the bladder exposed. This was of a horseshoe shape, convex towards the right side. The finger introduced into it felt the catheter, and when the point of the instrument was withdrawn the opening of the urethra into the bladder could easily be distinguished. The rent was judged to be about two inches in length, and was completely in sight. A suture was introduced behind its posterior termination, to hold and pull forward the bladder, and then the rent was closed by means of eight points of suture of fine silk, soaked in carbolic lotion,

passed through the peritoneal coat and muscular tissue, but avoiding the mucous membrane. The sutures were carefully examined after they had been tied, and if the interval appeared to gape at all a fresh one was introduced, but the bladder was not injected. After the eight permanent sutures had been tied the first or temporary suture was withdrawn. The peritoneal cavity was washed out plentifully with warm water. No clots were seen in it and but little bloody fluid. Then the abdominal wound was closed by four deep silver sutures, in which the peritoneum was carefully included, and four superficial ones. Finally, an incision was made in the median line of the perineum, which seemed to open the urethra, and an attempt was made (unsuccessfully as it turned out) to pass a drainage tube that way into the bladder. No spray was employed. The operation lasted about an hour. A morphia injection was administered, and the patient slept well, but vomited after the ether. Next morning the pulse was regular and strong; temperature 101°. He complained of thirst and of pain in the lower part of the abdomen, but had voided urine on three occasions naturally; it was blood-stained and contained a good deal of albumen. The drainage tube was removed as useless, and the perineal wound allowed to close.

Daily notes are unnecessary, for there were no symptoms to record. I looked at the wound on the fifth day, and found it nearly healed. The temperature fell gradually to the normal, and the pulse came down on the fifth day to 76. The bowels remained constipated for a week, and were then acted on painlessly by castor oil. On June 22nd (the thirteenth day after the accident) all the sutures were removed from the abdominal wound. As there seemed a little irritation about the lower part of the wound, a few pieces of strapping were applied. He wanted to get up, but was persuaded to keep quiet for a few days more. On June 29th he was allowed to leave his bed, as he appeared perfectly well. The wound seemed completely healed. The temperature had been exactly normal for more than a fortnight. He left the hospital shortly afterwards, and was seen the other day in perfect health.

Remarks.—It was long considered doubtful whether a rupture of the bladder into the peritoneal cavity had ever occurred without a fatal result, though Chaldecott's[1] well-known case was usually accepted as proving the possibility of survival. In that case, however (admitting the correctness of the diagnosis), it appeared evident that the patient owed his recovery to the fortunate accident of the limitation of the extravasation by adhesions, rapidly formed in the peritoneal cavity in the course of the peritonitis, which speedily followed the injury. Now, it is equally evident that peritonitis does not necessarily ensue at once;[2] it is, in fact, I believe, rarely developed even as early as a day after the injury, and up to that time, and very probably long afterwards, the injury is susceptible of successful treatment.[3]

Now the question occurs what this treatment ought to be? It seems to me undeniable that cases of traumatic rupture, both intra- and extra-peritoneal, have recovered under various kinds of treatment and under no treatment at all. But they are very few indeed, so few that, as I have remarked above, many surgeons, a very short time since, denied the possibility of recovery from the intra-peritoneal injury. Writing as late as 1875, in the first edition of my work on the "Principles and Practice of Surgery," it was not without hesitation that I ventured[4] to argue that the free admission of healthy urine to the peritoneal cavity, through a rupture of the bladder, need not be followed at once by peritonitis, and also to propose what I have long believed to be the best treatment—viz., to sew up the rent by abdominal section.[5] Singularly enough, from that time till the occurrence of the present case, I have never had an opportunity of putting my own suggestion into practice; but in the following year Mr. Willett[6] performed the operation without having heard of my suggestion, and it was repeated in 1878 by Mr. C. Heath.[7] Both these attempts proved unsuccessful. In Mr. Willett's case the rent was imperfectly closed, and the operation was undertaken too long after the accident to have a very good chance of success. In Mr. Heath's case the suture (a continuous catgut one) seems to have been perfect at first, but to have given way on the third day after the operation, possibly from the softening of the catgut. These two failures were so far discouraging that Mr. Heath says he "cannot recommend the proceeding for adoption when there would be the best chance of success—viz, immediately after the accident"—and expresses his preference for catheterism of the bladder and peritoneum and washing out the peritoneum through the catheter, as practised by Dr. H. Thorp, in a case reported in the *Dublin Quarterly Journal* for Nov. 1868, which Mr. Heath accepts as one of intra-peritoneal rupture, though the diagnosis appears to me to be not quite certain. Thus the matter stood until Sir W. Mac Cormac's two cases, which were published in the latter part of last year,[8] though one of them occurred in the previous year. Both these cases were completely successful, and by "completely" I mean that the patients not only recovered, but recovered without any symptom of peritonitis. In Chaldecott's and Thorp's cases peritonitis occurred. The other cases of recovery referred to by Mr. Heath—viz, Walker's and Mason's, the former certainly and the latter probably—were extra-peritoneal, and in Mason's case there was peritonitis.

In the table appended to Sir W. Mac Cormac's oration on Abdominal Section for the Treatment of Intra-peritoneal Injuries,[9] a table of sixteen cases is given in which the abdomen was opened in order to expose an intra-peritoneal rupture of the bladder. Of these, however, two (Nos. 9 and 10) should be excluded, for in one it is distinctly stated that there was no intra-peritoneal injury, and in the other there is no proof that there was. Of the fourteen remaining, in four cases the rent in the bladder was not sewn up (Nos. 2, 5, 11, and 15), and these, therefore, were treated by an operation totally different in principle from the remaining ten, in which an attempt, more or less successful, was made to close the whole rent. Of these ten patients, only three survived—viz., Sir W. Mac Cormac's own two cases and one by Mr. Walsham, which is as yet unpublished. Adding my case to the above, we should have eleven cases of suture of the bladder with four recoveries—a most gratifying proportion of successes in an injury which is otherwise almost uniformly fatal, but a proportion which, I have no doubt, will be rapidly increased as the diagnosis becomes more known and the details of the treatment better understood.

In the limits of this paper I cannot adequately discuss the question of diagnosis; yet it has so vital a bearing on the treatment that I must not pass it over entirely. In by far the greater number of cases which I have seen, the diagnosis has been plain from the beginning, but there are a few in which the patient can pass some urine, or in which, as in Sir W. Mac Cormac's second case, he feels no wish to do so, and the symptoms of the injury are masked by those of the contusion or possibly fracture of the parts around. It is in these cases that a careful examination under anæsthesia is so important. In the case before us, the catheter readily drew off more than half a pint of urine (or urinous fluid) mixed with blood, and for a moment the diagnosis seemed at fault. But when we reflected that the bladder had been thus evacuated twice previously—viz., first by Dr. Powell and next by Mr. Vernon, the house surgeon, and that after the withdrawal of the fluid the point of the catheter could be felt more than half way up to the umbilicus, it appeared impossible that the bladder wall could reach up to so high a point; so that we felt sure the point of the catheter was in the peritoneal cavity, as proved to be the case. Now this, I would urge, not only justified, but absolutely indicated the performance of an exploratory operation. I am aware that, in some cases of the kind, the bladder has been found unruptured and greatly distended, but the previous catheterisations rendered this very improbable in this case, while the great pain the man had felt immediately on, and ever since, the injury, and his inability to pass urine, rendered the

[1] Prov. Med. and Surg. Journ., 1846, p. 333.

[2] See the case quoted in my work, referred to below, where a man walked to the hospital on Monday morning, displaying no distress of any sort except from inability to pass urine, though the bladder had been freely ruptured into the peritoneal cavity on the Saturday evening. So in Sir W. Mac Cormac's second case, twenty-six hours had elapsed and there was no peritonitis.

[3] Sir W. Mac Cormac (THE LANCET, vol. ii., 1886, p. 1118) quotes a passage from Sir H. Thompson's article in the third edition of the System of Surgery, as showing that Sir Henry believes that traumatic rupture is uniformly fatal. A more careful perusal of the passage would have shown him that Sir Henry is here speaking only of spontaneous rupture in cases of retention.

[4] Op. cit., p. 216.

[5] Sir W. Mac Cormac says that the same operation has been advocated by Larrey, Legouest, Gross, and Cusack. He gives no references, but it may be so. At any rate, I never heard of the proposals of these authors, and they seem to have attracted no notice, for they are not referred to in any of the text-books of the period, as far as I know.

[6] St. Bartholomew's Hospital Reports, vol. xii., p. 209.

[7] Medical and Chirurgical Transactions, vol. lxii., p. 335.

[8] THE LANCET, vol. ii., 1886, p. 1118.

[9] Brit. Med. Jour., March 14th, 1887.

diagnosis still more probable. Next comes the question, in cases where an exploratory operation is decided on, whether it should be done through the perineum or the abdominal wall. My own opinion is very decidedly in favour of the latter course. I think, for reasons I will give presently, that a perineal incision is useless, and therefore hurtful, in cases where the injury is intra-peritoneal, and sutures are introduced through an abdominal wound. If the perineal incision is used, it ought, I think, to be as an alternative, not as an accompaniment of abdominal section and suture, and I hope to show that it is a very inferior alternative. An exploratory incision above the pubes gives much more easy and complete access to the whole front, fundus, and sides of the bladder, it has the great recommendation that the injured part is exposed to sight as well as touch, and the surgeon has the choice of opening the peritoneum or not, as he finds necessary.

Having decided to perform abdominal section the surgeon ought, I think, to lose no time. This is not quite such a platitude as it seems at first, for a good light is very necessary, and it crossed my mind whether a delay of a few hours might not be advisable in order to wait for daylight. But I think the event showed that we judged accurately in proceeding at once. When all operating theatres are provided with the electric light, or perhaps some even more perfect means of turning night into day, the question will not occur, at least in hospitals. When the rent is exposed, it must be traced to its deepest—i.e., posterior—termination, and it seems to me that the main (if not the only) difficulty in the operation is here. Luckily, in this case, it was quite easy to bring the whole rent into view. Sir W. MacCormac found that the transverse division of the parietal peritoneum was effectual in both his cases. When the posterior end of the rent is defined the sutures must be applied quite close to each other, but the continuous suture ought, I think, to be discarded. Silk, well carbolised and thin, seems to me indisputably the best material. Ought the bladder to be distended on the completion of the suture in order to make sure that it is water-tight? This is recommended by Mr. Willett,[10] and was practised by Sir W. Mac Cormac and other operators, and therefore it is presumptuous in me to argue against it. I do not know whether it was used in Mr. Walsham's successful case. My patient did very well without it, and I think that when the surgeon has the whole rent clearly in view it is superfluous. I am clearly and decidedly against any abdominal drainage if the rent is sewn up and the peritoneal cavity is free from inflammation, and has been well washed out. Nor, after the experience of the present case, do I think that the operation ought to be complicated by perineal cystotomy. In Mr. Teale's case (No. 13 in Sir W. Mac Cormac's table) the patient's death seems to have been caused by this wound, while all was going on well about the rent in the bladder. In my own case, it was merely a useless complication. But if the surgeon decides on doing it, he should make the perineal opening before sewing up the rent. After closing the abdominal incision I found it quite impracticable to open the collapsed bladder without a staff, which I judged it imprudent to introduce. Nor do I know that it is wise to use the catheter in the after treatment. It was not used in the above case, nor in Sir W. MacCormac's second case at all, nor in Mr. Walsham's after the first day; and if the rent is well sewn up it is, I believe, safer to trust to the patient's own powers. At any rate, if a catheter is used it should be of the softest material and not left in, but passed every few hours during the first day only. Paring the edges of the cleft, which Mr. Rivington[11] speaks of, should, in my opinion, be entirely reprobated.

The sum of all this is that in this, as in all other peritoneal operations, our aim should be to avoid all unnecessary complications, and trust to the perfect apposition of the wound in the bladder, and the thorough cleansing of the peritoneal cavity to ensure success. And I believe that with such treatment, the majority of cases will survive, if operated on early.

Three other methods of treatment have been practised with some success, and ought to be mentioned, though I have no space for their adequate discussion. I mean the treatment by drainage, either through an abdominal wound (as in the cases above referred to, Nos. 2, 5, 11, and 15, in Sir W. Mac Cormac's table) or through a perineal wound, or through a catheter, as in Dr. Thorp's case. The grand objection to all these plans is the extreme risk of peritonitis. It seems to me quite impossible effectually to guard against the entrance of irritating fluid and the products of inflammation into the peritoneal cavity, except by sewing up the wound. If this be left unstitched, it can only close by a gradual process of inflammation and granulation—a process which in the perineal operation, and in the method adopted by Dr. Thorp, is being continually interrupted by catheterising and syringing the peritoneal cavity through the lacerated wall of the bladder. I would therefore entirely reject the perineal operation and Dr. Thorp's method; while, as for the abdominal operation without sutures, I should reserve it for the cases in which it is found impossible to sew up the whole rent, and for those in which peritonitis has already begun and the edges of the rent in the bladder appear unhealthy. But I repeat that, as surgeons acquire greater confidence in the operation by suture, and perform it constantly in the cases where, as Mr. Heath truly says, there is "the best chance of success—viz., immediately after the accident," we shall not often meet with the latter class of cases; while, as to the impossibility of commanding the whole rent, we may hope that the plan adopted by Sir W. Mac Cormac of dividing the parietal peritoneum will prove successful in the great majority of difficult cases. Certainly, to judge by the description, both of his cases were of more than ordinary difficulty.

On the whole, I submit that we have now sufficient evidence to show that suture of the bladder through an abdominal incision is the best method of treating these grave injuries—the method which should first occur to the surgeon, and which should not be given up until exploration has proved it to be impracticable, when the method by drainage through the abdominal incision should be adopted.

Great Cumberland-place, W.

[10] St. Bartholomew's Hospital Reports, vol. xii., p. 213.
[11] Heath's Surgical Dictionary.

ON RELIEVING TYMPANITES BY PUNCTURE OF THE ABDOMEN.

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(*Concluded from page 106.*)

HAVING gathered information respecting the utility of puncture of the abdomen for dangerous tympanites from books, old and new, which record the results of individual experience, I will occupy a little space by an exposition of the teaching on this subject to be gathered from a few of our systematic works and text-books.

For this purpose I will commence by noticing the observations of the late Sir Thomas Watson (πολλῶν αντάξιος ἄλλων), whose opinion may well have greater weight than a dozen others. In his lectures on the Principles and Practice of Physic,[1] writing of mechanical occlusion of the intestinal tube, he quotes the rough-and-ready custom which obtains amongst farmers of piercing the distended abdomen of cattle, when they are, as it is said, "blown" by over-feeding on wet clover, with a hay-fork, and says that if he himself were "the subject of such pressing and prolonged torment [caused by distended intestine], I should try to have the inflated bowels eased by puncture with a fine trocar.[2]

Romberg, in his "Manual of the Nervous Diseases of Man,"[3] in one section treating of intestinal paralysis[4] from arrested action of sympathetic centres, speaks of cessation of peristaltic movement; the intestine, possessing no power of resistance, becomes distended with liquid and gaseous fluids. He states that "tympanites puerperalis sometimes threatens danger, even without antecedent affections of

[1] Vol. ii., 5th ed., p. 548.
[2] This strong recommendation of the operation is much in contrast with what Watson says, with his usual wise caution, of the operation of opening the colon, and establishing an artificial anus. Of this procedure, he observes that in an appropriate case he should think it his duty to mention, but he should be slow to recommend, this "anceps remedium."
[3] Syd. Soc. Ed., vol. ii., p. 347.
[4] Romberg observes that "intestinal paralysis occurs secondarily to other diseases, first of the intestinal canal itself; as in enteritis, in the most marked form in gangrene of the intestines, in peritonitis intestinalis and dysentery, in blood diseases, typhus, phlebitis, and inflammatory or septic puerperal states."

the bowel." He remarks that the stomach may be so much distended as to fill the abdomen.

Dr. Flint, in his treatise on the "Principles and Practice of Medicine" (1868)[5] alludes to "the formation of gas resulting from over-repletion of the stomach to such an extent as to cause sudden death. Two instances of this kind have fallen under my observation."[6]

In Dr. Bristowe's "Theory and Practice of Medicine" (p. 696), this operation of puncturing the abdomen is alluded to as being one of little or no danger; it is stated that distension may be relieved by puncturing the distended gut with a grooved needle or fine trocar and cannula. And in Quain's "Dictionary of Medicine," Dr. F. Roberts observes that "in extreme cases it is allowable to puncture the large bowel in several points by means of a very small trocar, and thus afford an exit for the contained gas."

In J. G. Smith's "Abdominal Surgery" (p. 79), it is stated that, in tympanites associated with abdominal operations, tapping with a fine trocar may give temporary relief; but this is so slight and so evanescent as to be practically of no account.

Mr. Erichsen, in his "Science and Art of Surgery,"[7] speaking of the operations in question, observes that by means of the trocar or aspirator, it "has been frequently performed, sometimes with great relief to the patient"; but he gives cautions against moving the cannula about needlessly in the gut. He remarks that the puncture is rarely followed by any escape of gas into the cavity of the abdomen. In some apparently helpless cases, he says, relief of the obstruction has been known to follow the paracentesis of the intestine.

The above citations constitute all the written experience which seemed to me desirable to select and collate for the purpose of enabling the reader to judge of the value of the operation in question; and perhaps already the same reader may be reminded of the adage, "L'auteur se tue à allonger ce que le lecteur se tue à abréger." But I cannot close this communication without presenting also the results of a few inquiries which I have made of friends and colleagues as to their individual and personal knowledge of the use of puncture in tympanites.

Mr. Hussey of Oxford tells me that he has punctured the intestine during the operation for strangulated hernia, and that, when he was a pupil, his master suggested puncture of the stomach in cases of excessive tympanites.

Sir James Paget has recently told me of a patient between sixty and seventy years of age, very feeble in body and mind, whose abdomen became distended to the utmost, after many days of complete obstruction or inaction of the bowels. "She appeared to be dying," he observes, "and I had no hope of doing more than relieve her distress by puncturing the intestines at the tensest places. I did this with a small trocar and cannula near each ilium, and at the upper part of the abdomen. Air escaped in large quantities, and the abdominal wall sank down. Some weeks afterwards I heard that the patient was in comfort, and that her bowels were acting."

Mr. Teale of Leeds, to whose use of the operation I have before referred, tells me that he has had no recent experience of puncture of the abdomen for flatulent distension. He says that he believes the operation to be "most effective when the large intestine is the seat of puncture. A puncture of small intestine only relieves a few inches, and is not entirely free from danger, as I have heard of fæcal leakage into the peritoneal cavity from such a puncture. It is most likely to be useful, and will be most free from risk in functional tympanites, especially of the large bowel, and to be of least use, and most dangerous, in obstruction of the bowels when the intestines are full of churned-up yeast-like gas and liquid."

Sir Wm. Jenner informs me that he has had the intestine punctured in several cases of extensive tympanites, and that in no case has any evil result followed. In one case, in which there was malignant disease of the sigmoid flexure of the colon, with obstruction, "two interesting facts followed the operation—one was that the gas which escaped through the tube caught fire, and the other that the removal of the flatus was followed by action of the bowels, as though the great distension of the gut had interfered with its full action." In another case of cancer in which Sir W. Jenner had sanctioned puncture of the bowels, each puncture of the bowel was found, after death, to be surrounded "by recent formation of cancer nodule, as if the irritation of the puncture had caused afflux of blood, and in place of ordinary lymph cancer had been formed."

Sir George Paget of Cambridge tells me that he has had only one case of tympanites requiring the puncture. The operation gave relief, but the patient died. Dr. Church and Dr. West, of St. Bartholomew's Hospital, and my colleagues, Dr. Dickinson, Dr. Whipham, and Mr. Holmes, inform me that they have resorted to the operation. Dr. Harper performed the operation in 1875, when house surgeon at St. George's. Mr. Dent tells me that he has a strong disbelief in the utility of puncturing in tympanites. Dr. Montague H. Jones, of St. Mary's Hospital, has practised it, though not with much advantage, in two cases of typhoid fever and one of intestinal obstruction.

Dr. Oliver of Newcastle-on-Tyne has given me the details of four cases, in which he had the operation done for tympanites with, excepting one case, the greatest relief. All but one were cases of mechanical obstruction. Dr. Oliver regards the operation "as not in the least dangerous, and as one almost certain to give 'relief.'" In one case he tested the gas which escaped by the puncture, but did not find it inflammable.

Dr. Gray, who has had large experience at the Radcliffe Infirmary at Oxford, tells me that his only knowledge of puncture for tympanites is derived from a single case. The patient was a lad of fourteen or fifteen years of age, suffering from severe typhoid fever. He observes: "One morning I found him to all appearance on the point of death from asphyxia, the upper half of his belly being so enormously distended that the diaphragm and lower thorax were fixed and motionless. I directed the house-surgeon immediately to thrust a small trocar into the most prominent part of the swelling (believed to be the stomach); and this done, the gas slowly blew off, the tympanites quite subsided, and the patient's relief was complete. He died, however, about three days afterwards of uncontrollable diarrhœa." After death ulceration of the ileum was found, but no peritonitis. The only trace of the puncture-wound (and that rather a doubtful one) was a little pink spot on the peritoneal surface of the stomach; no mark on the inner mucous surface of the stomach corresponding to the faint one on the peritoneal surface could be detected. Dr. Gray proceeds to observe that "the harmlessness of the puncture made much impression upon me. The cause of this probably was: 1. Thinning of the structures from extreme dilatation. 2. The small size of the trocar. 3. The urgency of symptoms requiring bold and rapid thrust-in of the trocar."

Sir Joseph Lister tells me that his experience of the operation is confined to one case. This was not favourable for the trial, but still death would have occurred earlier had the operation not been done. He does not regard the operation as absolutely free from risk, as "the valving of the puncture, which occurs when the distended bowel collapses, may be undone by subsequent extreme distension." Dr. Morgan and Dr. Dreschfeld, of Manchester, have sent me several cases illustrating the benefits obtained by the operation. Sir W. Mac Cormac considers the operation dangerous because of the risk of subsequent escape of fæcal matter, which would set up septic peritonitis. My friend Dr. Fox, of Clifton, has been in the habit of advising the operation, and states that he has never found anything but relief from it.

Dr. Henry Lewis of Folkestone, formerly house-surgeon at St. George's Hospital, has sent me the particulars of the following highly interesting case. He had under his charge a young lady about fifteen years of age, with "peri-typhlitis." "The abdomen became enormously distended, and death was imminent apparently, chiefly in consequence of the respiration being embarrassed by pressure upon the diaphragm, from the extreme distension. After a consultation with my brother," he says, "it was decided to relieve present distress by the use of Hemley's exploring aspirator. This

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[5] Third ed., p. 412.

[6] Reported in the Boston Med. and Surg. Journ. for March 10th, 1841.

[7] Vol. ii., p. 841.

[8] Dr. A. T. Myers has been so good as to give me the following references to the subject, which I have not had time to look up:—Brogniez: Nouveau Procédé d'Entérotomie ou le Ponction Intestinale (Bull. Acad. Roy. de Méd. de Belge; Brux., 1842-43, ii., 151—158). Augnet: Ponctions capillaires de l'Intestin (Bull. Méd. du Nord; Lille, 1875, xiv., 125—130). Evrard: Ponction Intestinale dans les cas de Météorisme (Trans. de Méd. et Chir. Prat.; Paris, xlvii., 158). Fronmüller, G., jen.: Ponction der Gedärme (Memorabilien; Heilbr., 1876, xxi., 208—210). Laub: Tilfaelde af Ileus helbredet ved Punktur af Tarmen og Klysopumpe (Hosp. Tad. Kypbenh., 1869, xii., 157, and 1870, xiii., 41). E. W. Lee: A case of Puncture of the Intestines for the Relief of Over-distension with Gas (Chicago Med. Jour., and Exam., 1877, xxxv., 381—83). A. Tomes: Tapping the Bowel (Indian Med. Gaz.; Calcutta, 1882, xvii., 211). Others might no doubt be found, if the prolific literature of the day were ransacked.

was done freely in several places, and enormous quantities of fœtid gas escaped into the room. This was, in subsequent operations, deodorised by passing it through a solution of carbolic acid. The following day the abdomen was again distended, and life was again in immediate danger. The abdomen was again freely punctured, with the same instant relief. For two or three times more the same series of phenomena occurred, after which the patient very slowly but surely recovered. The punctures were made into the most prominent portions, freely and deeply, quite irrespective of any possible consequences." Dr. Lewis thinks that the mitigation afforded to the system by the evacuation of so much poisonous gas is as important as the mechanical relief obtained.

As the position sought to be maintained in this communication would not be complete without illustrations derived from the *pathology of the lower animals*, I will close it by a few quotations from writers and practitioners in veterinary medicine.

The earliest direct mention of injury to cattle from tympanites which I have come across is in the writings of Pamponius Mela, who travelled in Ireland about A.D. 40, and who describes the climate, soil, and people of that unhappy country. He says that the cattle are wont to burst from eating green food too much. He writes as follows:—"Terra autem adeo fecunda herbis, non lætis modo, sed etiam dulcibus, ut se exiguâ parte diei pecora impleant; et, nisi pabulo prohibeantur, diutius pasta dissiliant." This notice I quote from a polemical letter signed "Viator," in *The Times* of June 24th, 1887.

Sennertus, in his work "Epitome Institutionum Medicinæ," Lib. II., Part II., cap. vii. (Lugduni), 1644, when treating "De Humoribus, &c.," says that he was conversant with it, and with its treatment. After giving the causes of flatulence in cattle, and the treatment of evils arising from it, he observes: "Rusticæ mulieres ut periculum ex flatibus et ventris inflatione præcaveant, ventrem arctis fasciis constringere; et abdomen fubulis perforare solent."[9] The above passage has been alluded to by one or two later writers, when speaking of tympanites in man.

No doubt, if one could hunt up authorities, many accounts could be found of this practice. The next record of it, of which I have note, is in a work entitled "Mémoires Littéraraires et Critiques pour servir à l'Histoire de la Médecine," 1775, as quoted by M. Barrière, who communicated a paper in 1783 to the *Journal de Méd. Chir. et Pharm.* upon "Meteorismus" from indigestion, in the case of the horse, relieved by puncture. The paper was based upon the operation which he had successfully performed, after all routine means had failed. In this paper he particularly points out that the right moment for election of the operation must be judged of by the state of the pulse; as, if it is found to be more than twice as frequent as it is in health, death is near. In some remarks on this paper M. Husard alludes to the practice of cutting boldly into the stomach of cattle when over-distended and with the hand taking the food out of the stomach.[10] He says that one cow does not die in twenty so treated. He mentions the names of Vitet, Paulet, Vicq d'Azyr, Bourgelat, and Chabert in connexion with the operation, and speaks of the gas liberated *as being inflammable*. Modern works on veterinary surgery make reference to the procedure in question, the majority, I think, approving. Thus, in a work entitled "The Horse in the Stable and the Field," by J. H. Walsh, p. 506, it is stated that "sometimes the distension of flatulent colic goes on increasing, and the only chance of recovery consists in a puncture of the cæcum, as it lies in the right flank, where, according to French veterinary writers, it may often be opened when greatly distended without dividing the serous covering." In the posthumous extracts from the veterinary records of the late John Field, I find notes of the case of a horse (p. 147) where death was attributed to the enormous swelling of the abdomen and to other symptoms caused by paralysis of the intestines. At page 83 a case of tympanites in the horse is related in connexion with inflammation of the bowels, in which, owing to excessive dilatation, the flank was punctured with a trocar. This was, however, without relief. Mr. Hussey of Oxford tells me that, forty years ago, he was told by the wife of a Scotch farmer that distension of the abdomen in cattle was very common, when the cattle first went out to grass, and that they were often, for this, "stabbed" in the loin below the last rib, but that if the puncture was done "on the wrong side," it was likely to be fatal. Dr. Aquilla Smith of Dublin informs me that in Ireland "our doctors practise puncture in cases of flatulent distension, and fasten a quill in the opening to give free exit to the flatus." He states that "some years ago a buffalo in our Zoological Gardens was operated on by a cow doctor, and had a quill secured in the opening. The animal lived for some days, and in the meantime I delivered her of a shoulder presentation, which was a difficult task." Professor Robertson, Principal of the Veterinary College in Camden-town, informs me that puncturing the rumen of cattle and the colon or cæcum of the horse, in cases of serious tympany, is an operation regularly resorted to by veterinary surgeons, and that the results are generally satisfactory. It is unattended with dangerous sequelæ. Emphysema or small "cellular abscesses" are occasionally observed to follow, but they are rarely very troublesome.

Lastly, I will quote from a remarkably interesting French work on veterinary subjects, the Dictionnaire de Médecine de Chirurgie et d'Hygiène Vétérinaires,[11] in which (tome i., p. 462), under the article "Coliques," the following statement appears:—"Si la tympanite devient trop forte, si elle gêne trop la respiration de l'animal, et le menace d'asphyxie, il ne faut pas hésiter à pratiquer l'entérotomie que l'on fait sur le flanc droit." The author speaks of the operation as having been recommended, in 1780, by Barrière and Herouard, and as having been successfully adopted by a number of others whom he names.[12] He warns against delay in having recourse to it. He states that he has, in some desperate cases, though without any real benefit, injected remedies, by the cannula of the trocar, into the punctured bowel.[13]

Such are the references to standard authorities and the illustrative cases supplied to me by living practical physicians and surgeons, which will, I think, suffice indisputably to show the great good which may be accomplished by the expedient, when timely resorted to, of puncturing the abdomen in excessive tympanites. They will be enough to demonstrate to those who have doubts or fears as to the wisdom of the procedure—that the operation is not, as some with whom I have conferred upon the matter would fain think, one to be regarded with ostrich-like indifference, to be "damned with faint praise," or, as others suppose, a wanton and necessarily dangerous, and therefore culpable, act—a species, in fact, of professional assassination; but that it is, incontestably, a legitimate and justifiable step, one that may be undertaken *tutò, celeriter et jucunde;* at any rate, that it has strong evidence in its favour as a *dernier ressort.* Their consideration will prove clearly that there are many cases in which the inexorable torments of death even can be forthwith averted by the operation in question, and Thanatos, with inverted torch, be made to give way to his brother Somnus with his poppies, medical aid stepping in, as, at once, *vitæ artifex, mortis fugator.*[14] But, in addition to immediate solace, it has been shown that *permanent good* may arise from the operation, from the fact that removal of the pent-up gas, in many cases, enables the paralysed intestinal walls to contract upon, and therefore evacuate, their contents, even after that constipation has lasted many days; and it is interesting to find that this not

[9] Sennertus quotes Dioscorides as describing a special kind of grass which causes cattle to burst, almost, and eventually to die.

[10] I am told that this mode of giving relief is now done in England, by some.

[11] The work is beautifully "got up," and well and copiously illustrated. An English translation would be a very valuable addition to our libraries.

[12] He alludes to a work by Charlier, entitled "De la Ponction dans les Coliques." Paris, 1863.

[13] This mode of dealing with cattle is ingeniously taken advantage of by the author of a well-known modern novel, "Far from the Madding Crowd," where the operation is graphically described. A number of sheep (see Chapter 21a) are represented as breaking into a field of young clover, and "getting blasted." An attendant exclaims, "They will all die as dead as nit." After a time many fell down helpless and livid, "swoln with wind," foaming at the mouth, and with quick and short breathing. "One of the ewes contracted its muscles terribly, extended itself, and jumped high into the air, then fell heavily and lay still," and died. Some recovered without operations, but forty-nine operations were performed with complete success with "a small tube or trocar, with a lance passing down the inside." "Passing his hand over the sheep's left flank, and selecting the proper point [the operator], punctured the skin and rumen with the lance as it stood in the tube, then he suddenly withdrew the lance, retaining the tube in its place. A current of air rushed out, forcible enough to have extinguished a candle held at the orifice." It would be interesting to know what authority the writer of the above has for describing the leaping into the air as a result of over-distension of the bowels.

[14] Many to whom I have spoken regarding the operation have said, "I should have liked to have done it many times, for years, but I dare not."

infrequent result was recognised by some of the oldest writers on the subject,[15] who knew that over-distension paralysed the muscular walls of the bowel. It may be suggested that in many cases of obstruction found after death to have resulted from volvulus, or twisting of the intestines (permitted in many instances by an unusually long mesentery), relief might have been obtained had the distending air been liberated by puncture. It has been shown that the danger to be anticipated from the operation is, no doubt, that of peritonitis; but this would seldom be from direct injury to the serous membrane by the instrument, but from the oozing or leakage into the peritoneal cavity of some of the contents of the bowel.[16] In some cases, however, in which at first sight after death it would appear that the puncture had caused harm by letting out fæcal matter into the peritoneal sac, it seemed, upon investigation, that this had been altogether a post-mortem phenomenon. In these days, when the surgeon, with his better educated "digitus chirurgicus" and antiseptic appliances, deals with the peritoneal surface in so very fearless a manner as compared with what was customary in earlier days, when we are bidden not to shudder on reading of "mopping out" the peritoneal cavity, "thoroughly sponging out," "making complete exploration of" the cavity, &c., we may well conjecture that this surface would not gravely resent so slight an affront as the piercing of it by a very fine trocar, or an aspirator needle. Of course, as regards the surgical aspect, properly speaking, of these cases, I am not competent to make suggestions. Surgeons will know how the procedure should be conducted in individual cases; but the general mode of operation may be gathered, I surmise, by those who have any doubt, from the directions and hints contained in many of the quotations which I have presented to the reader (see especially the words of Dr. Wathen, Dr. Saunders, and Mr. Teale). A very important lesson to be gathered from the experience of many whom I have quoted is obviously the absolute necessity of not delaying the operation too long—that is, of not waiting until irreparable mischief has been effected by prolonged pressure of structures and organs, and until the muscular walls of the bowel have been so long stretched and strained that their contractile power is irrecoverable, and are *ipso facto* paralysed.

ELECTROLYSIS IN GYNÆCOLOGY.

BY THOMAS SAVAGE, M.D., M.R.C.P., F.R.C.S.,
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HAVING recently had an opportunity of paying two visits to the clinique of Dr. G. Apostoli in Paris, where he practises the treatment of certain diseases of women by electrolysis, I have thought it might be useful to detail to the readers of THE LANCET some of the observations I made. There were each day between thirty and forty patients, all of whom came to be treated by electricity for some form of special ailment. Apostoli used simple faradisation to a considerable extent, simply as a means for the relief of pain—e.g., vaginismus, ovarian and uterine pains, proceeding from various causes. He appeared to regard it that the patients, being in pain, came to have it relieved, and that if the frequent application of faradisation gave the desired relief it was sufficient, leaving the disorder itself to take its own course. Some of these cases which I saw were prolapsed ovary, small cystoma (?), adherent organs, the result of chronic inflammatory mischief, hysteria, &c. The application certainly has an anodyne effect, as evidenced by the presence and absence of tenderness on pressure, &c., before and after its performance. It appeared, also, in some instances to have a soporific effect. I take it, however, that this is only the resuscitation of a method of treatment that has been long known and practised.

The *galvano-caustique chimique* is, however, the essential element in Apostoli's special work. The clinical history and treatment of a number of cases were read to me, and I was shown the plaster models of some of the abdominal tumours, and certainly the condition of the patient in every instance had considerably improved. In cases of uterine myoma, a dozen or more of which I saw and examined, the hæmorrhage had ceased, the tumour had diminished, pressure symptoms had subsided, and the patients expressed themselves as being very decidedly ameliorated. Dr. Apostoli uses the positive pole (acid), which is caustic and therefore astringent, for cauterisation to the interior of the uterus for endometritis, subinvolution, and bleeding myoma; and the clinical notes in the latter class showed that the loss had been arrested after three or four cauterisations. The applications are made at intervals of two or three days, sometimes longer, and amount to a dozen or more altogether. The electrode remains in utero about five minutes at each sitting and does not generally give rise to much pain. There appears to be an entire absence of danger in this, as also in the negative electrode.

The negative pole (alkaline and destructive), which has the effect of causing a flow of blood and destruction of tissue, was used for myoma by way of puncture into the mass of the tumour, causing diminution of size and amelioration of the pressure symptoms. The puncture was made with a steel rod, protected in the vagina by a celluloid sheath, having a naked point of about two centimetres. This is allowed to remain in the tumour for five minutes, and is repeated from time to time as considered necessary. Formerly punctures were made of 6 or 7 centimetres. The patient has an anæsthetic if thought desirable, and rests in bed afterwards for an hour or two. No bleeding of importance has been noticed as a result of the puncture; when it has occurred, it has hitherto always been arrested by putting the vaginal wall on the stretch by means of a plug or the speculum. For the positive cauterisation a platinum intra-uterine sound is usually employed.

The galvano-caustic (negative) is sometimes used in cases of old, never acute, perimetric inflammation, acting, as is supposed, as a derivative. It is never used for the arrest of hæmorrhage. Most of the cases of pelvic peritonitis that I saw were on the right side, and I was struck by the absence of badly ruptured perineum and cervix, where the symptoms were old inflammations of post-puerperal origin. I saw negative puncture applied in a case described as "subacute perimetritis," which, on examination, showed a mass of exudation and tumour round the uterus. I saw a case of mucous polypus of the cervix, which Dr. Apostoli was going to treat with the negative application. He preferred this plan to the usual one of excision or ordinary caustics, as the electrolytic application would not only burn away the polypus, but also so alter the character of the mucous membrane of the cervical canal as to prevent a recurrence. The intensity of the action is regulated by a galvanometer, which measures up to 250 milliampères. Action is usually allowed from 100 to 150—more often the latter. Platinum is considered too soft for the negative puncture, and the steel rod which is employed is either simply pointed like a packing-needle, or spear-shaped. The steel point, after use, does not appear to be at all acted upon by the alkali, nor did it show any trace of blood on its withdrawal.

With every patient the dorsal position is adopted. The hands are washed in sublimate solution before examination, and the vagina is carefully irrigated with the same. All the instruments are kept in a porcelain dish containing antiseptic fluid. The abdomen is covered with a large piece of wet clay in which the opposite conductor is embedded—negative for cauterisation; positive for puncture. This is kept, by an assistant, closely applied to the abdominal wall, and ensures safety to the skin, which is always quite cool during and after the operation. The vaginal irrigation is repeated after withdrawal of the conductor, and the canal is packed with strips of iodoform gauze, changed from day to day if necessary. One patient presented herself (a first visit) with what was considered a small ovarian cystoma; and Dr. Apostoli said that he should apply galvano-puncture (negative) to it. It appeared to me that it would be extremely difficult so to fix it as to ensure accurate puncture, and I asked the question whether it might be desirable or justifiable for the tumour to be fixed from above by the fingers, through a small abdominal incision in order to facilitate the application of the negative needle per vaginam—a sort of combined operation. I was, however, forced to the conclusion that if a small incision were once made through the abdominal wall, the easiest and surest way of curing the patient would be there and then to remove the

[15] These older writers were also acquainted with the facts, now much relied upon, that diuretics and other medicines given in cases of ascites fail to act satisfactorily until the peritoneal liquid has been discharged by paracentesis. They were also conversant with the application of electricity for the purpose of making the intestines contract in tympany.

[16] In a few cases I have heard of peritonitis having apparently surrounded the orifice made by the trocar into the outer surface of the bowel.

tumour. Dr. Apostoli is aided in his work by two admirable assistants and a most intelligent nurse.

It would obviously be impossible from an observation of two short visits to give an opinion of real value as to the merits of Dr. Apostoli's treatment. I was induced to pay my visits from a desire to learn for myself the details of applying the electrolysis, especially to cases of uterine myoma. I have long felt that we want some means other than those which we possess for the treatment of many cases of fibroid tumours of the uterus. Hysterectomy, grand and perfect when successful, has even now a larger mortality than is desirable, and can be practised only as a last resort. Will electrolysis ever be able to be a substitute for the more heroic treatment? It is our duty to answer this question if possible. With this state of mind, therefore, I am prepared to try the effects of Apostoli's method, and hope to be able to communicate in due course the results of such experience.

With my present views I thought that some of the cases I saw could have been cured by abdominal section, and on telling this to Dr. Apostoli and Dr. Woodham Webb, they both seemed to imply in their answers that when I knew more of what electrolysis could accomplish, I should be as enthusiastic in favour of it as themselves, and should substitute it for many cases now calling for abdominal section. The battery and all necessary appliances can be obtained of M. Gaiffe, 40, Rue St. André-des-Arts, Paris, at a cost including freight, &c., of about £25. I have much pleasure in testifying to the extreme courtesy of Dr. Apostoli, who allowed me to see for myself everything connected with his work, and explained most fully every detail. I had the pleasure also of meeting Dr. Woodham Webb, who most kindly assisted me by explaining what appeared difficult.

Birmingham.

BILATERAL PARALYSIS OF THE DILATOR MUSCLES OF THE GLOTTIS, WITH SUBSEQUENT PARESIS OF THE CONSTRICTORS.

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(*Concluded from page 110.*)

THE following case, which has come under my own observation, illustrates some of the points in dispute: A. R——, aged forty-seven, a carpenter, came to the out-patient department at the Brompton Hospital on Oct. 15th, 1886, complaining of difficulty in swallowing and shortness of breath. These symptoms had appeared twelve months previously, and for some five or six months he had been losing flesh. About three months ago hoarseness developed, and the dysphagia and dyspnœa became so much worse that he was able to do very little work. For the last week he had been completely laid up owing to increasing shortness of breath. There was no history of syphilis, but he stated that he had suffered from "rheumatic gout" in the wrists and ankles. Family history unimportant. The patient was anæmic and cachectic looking, being very thin. Breath extremely offensive. Voice only slightly hoarse. Marked inspiratory stridor. Neck swollen, owing to the presence of deeply-seated groups of large hard glands in both anterior and posterior triangles, especially in the former position. Veins at root of neck distended. There was scarcely any movement of the larynx up and down with respiration. A few shotty glands in right axilla. Left radial pulse smaller than right. Pupils equal. Tongue furred; bowels constipated. On physical examination of the chest the expansion of the left side was somewhat impaired; there was slight dulness over the manubrium sterni extending a short distance to the left, and over this area tracheal breathing. The breath sounds were weaker at the left apex than the right. No other abnormal signs. The pharynx was congested and irritable, and the larynx was in the same state. The vocal cords approximated during phonation to the normal extent, but on inspiration they did not diverge more than one-sixteenth of an inch. On very deep inspiration the cords almost met in the middle line. There was no appearance of tension of the vocal cords; indeed, they seemed to be more lax than usual. The patient was thought to be suffering from a new growth of the cervical and mediastinal glands, possibly secondary to malignant disease of the œsophagus, implicating the recurrent laryngeal nerves. The patient was admitted into the hospital under my care, through the kindness of Dr. Symes Thompson. After admission he had one or two severe attacks of dyspnœa, and preparations were made for tracheotomy, but, after a consultation with Mr. Godlee, the operation was deferred, although dyspnœa continued to be a prominent symptom. The patient was able to swallow liquids with difficulty, but not solids, and the dysphagia did not increase much for the first four or five days. The temperature varied between 98° and 100° as a rule, and did not rise above 100·5° at any time. Sphygmographic tracings seemed to confirm the idea that the left radial pulse was smaller than the right. On Oct. 21st Mr. Godlee kindly examined the patient's œsophagus, and reported as follows: "Bougie (No. 9, Mackenzie's) stops at seven inches and a half from incisor teeth. The man struggles very much, so attempts had to be short. No blood. The finger will not reach beyond the tip of the epiglottis." A few days later a marked improvement took place in the breathing, and on Oct. 26th I found that, although the dyspnœa was decidedly less, the patient's voice was now very weak and high pitched. The man could not swallow either liquids or solids, and had wasted rapidly. "Fœtor ex ore" was more marked than ever. On laryngoscopic examination the opening of the glottis was distinctly wider. When attempts were made to phonate, the cords approached one another to some extent, but in a faltering manner. This imperfect adduction could not be sustained as in singing, but after a momentary movement towards, but not quite up to, the middle line, the vocal cords diverged and took up a position midway between that of quiet inspiration and phonation. No further opening of the glottis occurred on the deepest inspiration. The impression gained was that the constrictors of the glottis acted in a weak, irregular manner, while the dilators were completely paralysed. Recourse was now had to nutrient enemata, but the patient continued to waste with great rapidity. Mr. Godlee again saw the patient, and suggested gastrostomy, more as a means of postponing the end than with any hope of long-continued relief. The chances of the operation were put before the patient, and he decided to have it done. Gastrostomy was performed by Mr. Godlee on the afternoon of Oct. 30th. The pulse failed somewhat during the operation, but improved again, and the man appeared to rally somewhat afterwards. This improvement, however, was only temporary, and he gradually sank without any rise of temperature, and died the next morning at 9 A.M. No change was noticed in the laryngoscopic appearances after the 26th, but no examination was made after the 29th. The voice preserved its weak, high-pitched character to the end.

Abstract of necropsy.—Large nodular masses of new growth were found in both anterior and posterior triangles of the neck, being most abundant towards the middle third of the neck. These masses, which were hard and white, lay mainly beneath the sterno-mastoid muscles, and were matted together, forming a nodular chain continuous with a similar growth in the posterior mediastinum. There were only a few small nodules in the anterior mediastinum, though the connective tissue here was very dense and obviously thickened. The common carotid arteries were pushed forwards and inwards by the growth, which lay to their outer side, and the left subclavian artery was somewhat compressed. On the right side the vagus was not at all pressed upon, but opposite the cricoid cartilage the nerve presented a large fusiform swelling like a ganglionic enlargement. The right recurrent laryngeal nerve was traced round the subclavian artery to its entrance into the larynx, and was not implicated. On the left side the vagus was buried in the cancerous material at the level of the upper third of the thyroid cartilage. On dissection, the nerve could be traced with ease through the growth, and, though it was somewhat flattened, it did not appear to be infiltrated. Below this point the nerve was thinner than the vagus trunk on the other side. The left recurrent nerve passed freely round the aortic arch, but was embedded in the growth along the lower part of the trachea. The superior laryngeal nerve, with its external branch, was quite free on each side. The œsophagus, from a point one inch below the cricoid cartilage down to its termination, was infiltrated and thickened. Opposite the junction of the upper and middle

third of the trachea the gullet was extensively ulcerated, and there was a ragged oval perforation of the trachea one inch and a half in length. There was a similar growth in the mucous membrane of the trachea from this point almost down to its division, with slight ulceration in places. The lower part of the pharynx contained a few miliary nodules on its mucous membrane, one just above the left border of the cricoid cartilage, but there was no infiltration of subjacent structures. The larynx was quite free from disease. The vocal cords lay in the cadaveric position, and could be moved freely to and from the middle line. There was no interference with the crico-arytenoid articulation. On removing the mucous membrane covering them the crico-arytenoidei postici looked pale and thin, but not more so than the muscles generally. The crico-arytenoidei laterales presented no abnormal appearance. The lower lobe of the left lung contained one small nodule, and there were a few enlarged glands behind the stomach and liver. The gastrostomy wound looked quite healthy, and there was no peritonitis. The rest of the abdominal cavity was free from disease. The brain with its vessels and membranes appeared quite healthy. Microscopical examination showed that the growth was a carcinoma (squamous epithelioma). In sections of the fusiform enlargement of the right vagus it was seen that almost all the nerve bundles had been destroyed, but the outlines of the bundles were still visible. The nerve fibres were replaced by an opaque granular material, which exhibited indistinct circular markings like those of the original fibres, but without any trace of axis cylinder or medullary sheath. Every section showed two or three small bundles of healthy nerve fibres, situated in each case peripherally—i.e., immediately beneath the epineurium. The epithelial growth could be seen between the nerve bundles, and in many cases lying inside the perineurium. In a very few places scattered epithelial cells were seen between the individual nerve fibres. Sections of the left vagus below the point of compression showed an opaque granular condition of the nerve fibres, with complete loss of axis cylinder and medullary sheath. Here and there a few healthy nerve fibres were seen lying scattered among the degenerate fibres, and not collected into bundles. Both recurrent laryngeal nerves were in much the same state. A few healthy fibres were seen here and there, but there was the same widespread granular transformation of the medullary sheath and axis cylinder, and in places the nuclei of the neurilemma were increased in number, and connective-tissue development appeared to be going on. The crico-arytenoidei postici and the right crico-arytenoideus lateralis were examined, and presented the following appearances. Most of the muscular fibres were normal and distinctly striated, but in all three muscles some of the fibres were thinner than the others and were slightly granular and devoid of striation. Mere degenerate fibres were not numerous in any of the muscles, but were more abundant in the postici than in the lateralis muscle.

The bearing of the present case on the subject of abductor paralysis is obvious. The patient presented at first the appearances of bilateral paralysis of the dilators to which was added subsequently paresis of the constrictors of the glottis. It is difficult to say how long the paralysis of the dilators had existed when the patient was first seen, but we know that this condition was present during the last fortnight of his life, and paresis of the constrictors only developed four or five days before death. The anatomical relations of the new growth found after death quite explain the succession of clinical symptoms. Both vagus nerves were compressed above the origin of the recurrent laryngeal nerves, one of these nerves being also involved in the disease. The first muscles to feel the effects of the gradually increasing pressure of the growth on the motor nerves were the crico-arytenoidei postici, the adductors showing no loss of power till a much later date. It is remarkable that in spite of the very decided pressure on the nerves which existed, the laryngeal muscles showed comparatively so little evidence of degeneration. It must be remembered, however, that some few healthy nerve fibres were found in each recurrent laryngeal nerve. Possibly, too, the complete immunity of both superior laryngeal nerves may have had something to do with the maintenance of nutrition in the muscles, for Exner's investigations teach us that this nerve takes more parts than was previously thought in the innervation of the laryngeal muscles. Krause wishes to exclude cases like that above described so as to avoid the possibility of a direct invasion of the muscles or their terminal nerves by the growth. But, as Rosenbach urges, these cases are specially suited for the elucidation of the question, illustrating as they do the uncomplicated effects of pressure on the nerves. In Rosenbach's, as in my case, the larynx itself was quite free from the growth, and the fact that in his case the necropsy was made by Professor Marchand is an ample guarantee of the correctness of the description which Rosenbach quotes. Cases like these and some of Dr. Semon's contradict Tervaert's assertion that no uncomplicated case is recorded in which paralysis of the dilators passed into complete paralysis of the recurrent laryngeal nerve. Krause lays himself open to a serious fallacy when he compares his experimental studies in animals with the affection known as abductor paralysis in man. Electrical stimulation of the laryngeal nerves of a dog can hardly be said to come within the same category as the degenerative processes set up in the corresponding human nerves by the slowly-increasing pressure of a carcinomatous growth. The same must be said of his attempts to imitate this slow degenerative process by his experiments with the cork. The appearances described in the nerves which he subjected to this treatment are those of acute neuritis, not chronic degeneration. Even granting that he really did produce a tonic contracture of the adductor muscles, which is somewhat doubtful, the difference between the method of production of his artificial contracture and the affections which occasion a similar position of the human vocal cords is so great as to forbid any analogy being drawn between the two conditions. It is strange that the closure of the glottis resulting from electrical stimulation of the nerve ceased when inspiration occurred, in spite of the irritation being maintained, whereas the median position of the cords produced by the pressure of the cork was unaffected by inspiration; and yet in both instances Krause ascribes the approximation of the cords to contraction of the adductors resulting from irritation of the motor nerves.

It will be seen from the various criticisms already quoted that the general opinion is adverse to Krause's views, and, as Professor Fraenkel says, the hypothesis of a primary neuropathic contracture merely adds to our difficulties. The fact that in the case described above both superior laryngeal nerves were unaffected may be claimed by Tervaert as supporting his view. But his theory quite fails to account for cases of abductor palsy dependent on central disease, and cannot therefore be regarded as admitting of general application. Seifert's cases do not throw much light on the subject. For the larynx was only examined anatomically in one case, and the account given is not complete. Whether the laryngeal paralyses described by Seifert can be credited to the influence of lead must remain at present a matter of doubt.

It seems, then, that Semon and Rosenbach have proved their point as to the vulnerability of the abductor nerve fibres, but an explanation is still wanting. It is hard to say whether the vulnerability attaches to the nerves alone or to both nerves and muscular fibres. Dr. Semon, I believe, inclines to the latter view. Simanowski's observations are interesting, as pointing to structural differences in laryngeal muscles. If the terminal motor nerves and their end organs are less abundant in one group of muscles than another, it is easy to conceive that any disease of the corresponding nervous tract, whether central or peripheral, would react more disastrously on this set of muscles than on another group more richly supplied with nervous filaments.

The writer of a leading article in THE LANCET, June 5th, 1886, endeavours to account for the vulnerability of the dilators by a mechanical explanation suggested by Dr. Gowers—viz., that the abductors are inserted at an acute angle into the muscular process of the arytenoid cartilage, and therefore act at a disadvantage as compared with the adductors, which are inserted into the same process almost at a right angle. There are, however, strong objections to the acceptance of this theory, plausible as it seems at first sight.

Mr. Horsley and Dr. Semon[1] have found that if the larynx be excised from animals immediately after death, and the elecrical current be applied directly to the muscles themselves, the crico-arytenoidei postici lose their excitability long before the adductors. Again, some experiments of Dr. Hooper[2] of Boston, published in 1885, and confirmed and

[1] Brit. Med. Journ., Aug. 28th and Sept. 4th, 1886.
[2] Transactions of American Laryngological Association, vol. vii.

amplified by Horsley and Semon,[3] show that the degree of ether or chloroform narcosis determines whether the dilators or constrictors shall react to electrical stimulation of the recurrent nerve. When the anæsthesia was slight, irritation of the nerve produced adduction of the vocal cord; when the anæsthesia was more profound, stimulation of the nerve caused abduction of the cord from the middle line. The differentiation obtains when the peripheral end of the divided nerve is excited, pointing to the action of the anæsthetic being peripheral and not central. Facts such as these do not fit in well with the mechanical explanation suggested above, nor with the idea of the preponderance of the adductors assumed by Krause.

Brook-street, W.

ON LATERAL CURVATURE OF THE SPINE.

By RICHARD BARWELL, F.R.C.S.,
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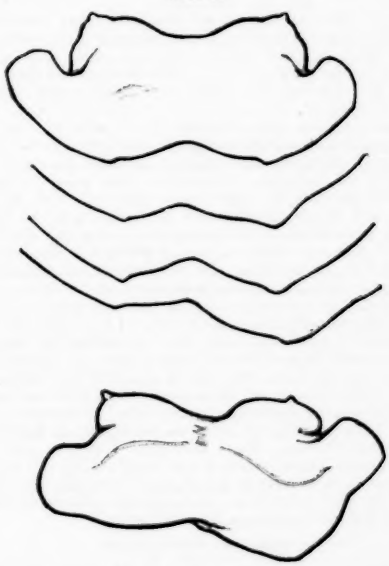
III.

AT some future opportunity, and in some method which affords to me a greater amount of space than can be allotted in the columns of a journal, I shall discuss the exceedingly difficult and much controverted etiology of curves primarily dorsal; here I must confine myself to semeiology and treatment. From whatever cause it may arise, the first advent of dorsal curvature, though occasionally pretty rapid, is in the vast majority of instances insidious and slow. The early changes of form are indicated, not by any aberration in the line of the spinous processes, but by certain alterations due in the beginning solely and entirely to rotation, and this, although the vertebræ as a whole, more especially their bodies, may have considerably deviated. This apparent paradox is due to the fact that by the very act of rotation the spinous processes of the aberrant vertebræ are carried towards the concavity of the curve, and that therefore a certain amount of deviation is, as far as the tips of the spinous processes are concerned, compensated by the rotation itself. But the ribs having a long sweep outwards from the spine, act as indices which show even a very small degree of rotation, a much smaller degree than can be detected by any examination of the spine itself, as, for instance, at the loins.[1] Hence changes of form produced by such twist can be verified by noting just about and outside the line of insertion of the longissimus dorsi tendons, the exaggerated backward projection of the ribs on one side, their diminished protuberance on the other. Moreover, the scapulæ lie on and are supported by the ribs, and must change their position and the direction of their surfaces with any alteration in the planes and forms of the bed on which they lie, hence certain changes in the shape of the shoulders are aids in the diagnosis, and are usually the special point which first attracts the attention of parents, and generally continues throughout the case to be the chief object of their solicitude.

Thus considered, it will be plain that diagnosis depends on a subtle perception of form, or rather of deviations from natural and healthy symmetry, which I will do my best to explain. Dorsal curvature is usually, though by no means exclusively, to the right. We will therefore suppose, for the purposes of description, a curve convex in that direction. The earliest sign, before any lateral deviation can be found, and before any obvious change in the position of the scapulæ takes place, is a greater fulness and roundness of the posterior aspect of the right side of the chest, and a certain flatness on the left side around and about the lower angle of the scapula, as also between that point and the spine. A most useful and instructive method is to investigate the form from above, either by letting the patient sit on a low stool, or better by the surgeon standing on one while the patient remains erect. Whichever of these two plans be chosen, the chiefly important point is to look straight down the spine, noting also the conformation of the bordering parts, thus obtaining, if I may so express myself, a bird's-eye view of the patient's *torso*. The annexed series of outlines (see Fig. 7) are diagrams of the forms as thus seen, the head being omitted as likely to confuse the sketches, which were in each instance taken from life. The first is the normal form, showing absolute symmetry of left and right sides—the next three show the progressive changes of the back and shoulders in cases of increasing severity; the fifth depicts in a severe case the changes of back, shoulders, and chest. Now, to explain the last four outlines The depression near the middle of the figure is the place of the vertebral groove. On the left of this (concave side) the outline is slightly flattened, and the slight projection, a little further out (the posterior border of the scapula), lies pretty near the spine and the shoulder blade itself; the line still further out beyond the slight projection is the spine of that bone, looks too directly backward. On the right (convex) side the line from the vertebral groove outward becomes in increasingly severer cases more and more rounded, the posterior costa of the scapula recedes further from the spine, and the hinder surface of that bone looks abnormally outward.

These outlines and description form a key to the back view, in which, by careful lighting[2] these positions, the projections and depressions can be well studied, and the distances of the scapulæ from the spine measured. Moreover, it will be found that the right one sits close to,

FIG. 7.



and pretty firmly on, the ribs; the left lies looser, even a little way off the ribs, so that the surgeon can pass between them—that is, under the venter of the scapula—the ends of his fingers. Hence while the right shoulder is both thick and high, the left one is flat, flaccid, and low. In all but very early cases the line of the spinous processes is curved towards the right, but the proportion between the amount of curvature and the amount of rotation varies in different cases. Soon after the appearance of the dorsal deviation the lumbar spine begins to assume a secondary or compensating curve to the left, and the marks and signs of lumbar curvature, described in my former paper, are superadded to the above changes—namely, the deeper incurvation on one side (left) of the waist, the apparent sideways shifting of the upper part of the figure on the pelvis, the disparity of the two rounded angles between the iliac and the dorsal halves of the trunk. Moreover, about this period—sometimes a little earlier, sometimes a little later—evidence of alteration in the form and position of the ribs may be observed, though a little careful study will show that the anatomical changes must have begun some time before they were clinically perceptible. They are shortly described as follows. The angles of those on the convex side of the

[3] Loc. cit.

[1] In my treatise on Lateral Curvature, I have shown that the ribs, besides being indices to mark, are levers to produce rotation.

[2] A light direct from above has many advantages.

spine become more acute, their first part from the head to the angle taking a course too directly backward; the body of the bone from the angle onward is directed too much forward, the whole rib being a segment of too small a curve. On the left (concave) side the first part is directed too little backward, the body runs too little forward—in other words, takes too outward a course; the angle, therefore, is too obtuse, and the whole bone too straight, forming a segment of too large a curve. The changes, therefore, on each side, directly the reverse of one another, are in each instance the continuation further afield of the alterations which I described[3] as taking place on the pedicles and transverse processes. But besides these alterations of form, besides the backward projection of the right and forward yielding of the left ribs other changes of position must be noted—viz., as lateral deviation of the vertebræ becomes marked, and, indeed, as a necessary sequela of that deviation, the thoracic rings become oblique in different directions. The condition may be illustrated thus: suppose seven vertebræ, from the third to the ninth dorsal, to be affected, the second and the tenth being on the median line and straight, the ninth, eighth, and seventh slope over to the right and stand oblique, the sixth, however, is perpendicular, while the fifth, fourth, and third slope back towards the middle line or towards the left, and stand in an obliquity of contrary direction to that of the three lower of our series. Hence, in the left (concave) side the ribs are on the axillo-iliac line packed close together. The middle rib of the series may be taken as normal; but above this they slope too much downward; below it, too much upward. On the right (convex) side the contrary conditions obtain; the basket-work of the chest is too open; the ribs below the most deviated vertebra slope too much downward, those above it too much upward. Thus, to sum up, the ribs undergo three sets of changes—(1) changes of form, (2) changes of position connected with rotation of vertebræ, (3) changes of position connected with obliquity of vertebræ. Naturally, the whole shape of the thorax and of the upper part of the abdomen alters, and many disturbances of function, great loss of health, invalidism, with persistent pain, are thus produced. For the heart is, though often not displaced, yet thrown out of position, the respiratory movements are greatly restricted, the stomach and liver are pressed upon and disturbed. Moreover, the figure becomes considerably, in the worst cases hideously, distorted. I have seen instances in which the ninth and tenth ribs lay within the venter of the ilium well below the crest, and it is not at all unusual to find the angles of the ribs, altered as above described, forming a conspicuous prominence, often taken, previous to closer examination, for the usual "humpback" of angular curvature. These conditions came on slowly in an uncared-for or mistreated case. Thus advanced they are incurable, though relief and alleviation can be afforded; but the very slowness of their advent gives great opportunities for, and shows the high importance of, early and rational treatment, such as I shall describe in my next paper.

ON TWO CASES OF

VAGINAL EXTIRPATION OF THE UTERUS FOR CANCER;

WITH REMARKS ON THE OPERATION.

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IT is now generally admitted that it is unnecessary, and indeed in most cases a mistake, to remove the uterus for cancer of the cervix alone. The tendency of cancer of the cervix is not to spread upwards towards the body of the uterus, but outwards through the thickness of the neck, so as to involve the cellular tissue. It is only when the disease commences near the os internum that it is likely to spread upwards beyond the cervix. This is a pathological fact of the greatest practical importance. It is now, in this country at any rate, generally agreed that it is only in cancer of the body of the organ, or in some cases commencing close to the os internum, that removal of the whole uterus is called for, or even justifiable. In cancer of the cervix not too far advanced for operation it is only necessary to divide the vagina from the cervix all round, and remove as much of the lower portion of the uterus as may be required to cut well beyond the disease. Almost any portion of the uterus short of the whole may be thus removed without opening the peritoneum. At the Leeds Infirmary we have for some time supplemented this operation by removing a further portion of uterine tissue by the use of chloride of zinc. This is followed by great contraction of the cicatrix. This "supra-vaginal amputation of the cervix" might with some justice be called "Baker's operation," as it was first described by Dr. W. H. Baker, of Harvard University, in the *American Journal of Obstetrics* of April, 1882. The mortality from this operation is very low (7·8 per cent.), and it gives equally good results as to freedom from recurrence in cases of cancer of the cervix, and when, or if, recurrence does take place it is very rarely in the stump of the uterus, but in the surrounding cellular tissue. In this paper I shall not again allude to this operation, as it concerns only cases for which it is not sufficiently radical. It is, of course, only possible to treat cancer of the body of the uterus by the removal of the whole organ, and it is now well established that this should be done by the vaginal method (kolpo-hysterectomy) whenever possible, and that what is known as Freund's operation, or removal of the uterus by abdominal section, with its mortality of 72 per cent., should be employed only in exceptional cases.

The two cases which form the subject of this paper were both primary cancer of the body of the uterus. I propose to relate them somewhat briefly, and subsequently to give more fully some details of the operation.

CASE 1.—This patient was thirty-eight years of age. She had had several children, the last being twins, three years before her admission to the infirmary in October, 1885. She was in bad health from loss of blood, which had been going on for a year and a half, in spite of the removal of a polypus in July, 1884. The uterus now again contained a polypus, which, although it had a comparatively narrow neck, grew from a widely extended base on nearly the whole of the anterior wall and fundus. The microscope showed this to be a round-cell sarcoma. The uterus was freely movable, and the disease had probably not extended beyond it.

On Nov. 14th, 1885, with the able assistance of Mr. Mayo, who was then resident surgical officer, and of Mr. Croft, our present resident obstetric officer, I removed the uterus entire per vaginam. Having separated it from its vaginal attachments all round and from the bladder anteriorly, and the peritoneal cavity being opened before and behind, the fundus was retroverted through the posterior wound. I had intended at the same time to push the cervix up through the anterior wound, but found it easier to bring the whole organ out at the vulva, when it lay fully exposed to view, the fundus pointing downwards and the cervix upwards as the patient lay in the lithotomy position. The only attachments were the broad ligaments, the vaginal bases of which had been divided, and these being healthy and elastic there was no difficulty in doing this. Had it not been for an unfortunate accident which now occurred, the operation would have been quickly concluded; but finding that I had not separated the uterus from the bladder sufficiently at the sides of the anterior wound, I widened it by tearing through the cellular tissue a little at each side with the finger. This must have thrown too much strain upon the coats of the bladder, weakened by its separation from the uterus, and a small laceration took place, of which I was not aware until later in the operation. The broad ligaments were now tied in two parts, including, of course, the Fallopian tubes and round ligaments, and the uterus was cut away. It was necessary to tie two vessels in the stumps of the broad ligaments. I now found out the laceration of the bladder, which was about three-quarters of an inch in length and transverse. This was closed by sewing the peritoneum over it to the anterior vaginal wall by a continuous suture, and as it was near the edge of the vaginal wound, it was also included with the peritoneum covering it in the catgut sutures by which the anterior and posterior vaginal walls were alternately brought together. The patient was in such a condition that her death before the conclusion of the operation was possible, and no time was lost which could be avoided, the whole being concluded in one hour and ten minutes. A slow but complete recovery ensued without the occurrence of any unfavourable symptoms. I thought I had made the wound in the bladder quite safe, but a fistula nevertheless resulted. In the following June

[3] First paper, June 25th.

the patient was readmitted and the fistula closed. It was very inaccessible, as it could not be pulled down into view like an ordinary fistula, and it was not an aperture, but a small funnel-shaped canal at right angles to, and at the summit of, the vagina.

The patient was heard from thirteen months after the operation. There was no return of the disease, she could retain her urine, and was in fair health.

CASE 2.—Mrs. L——, widow, aged fifty, recently a cook in domestic service; never pregnant. She had suffered from excessive menstruation for four years; no pain until recently. On examination of the abdomen a rounded and somewhat nodulated tumour was felt nearly central, and reaching four inches above the pubes. This was found to be the uterus, the mouth of which was closed. The cervix having been dilated, it was ascertained by the aid of the finger that the growth had the clinical characters of cancer of the interior of the body, extending downwards into the cervix, but not actually implicating the lips of the uterus. This was confirmed by microscopic examination. The organ was fairly movable, but not as freely as in the preceding case. No extension of the disease to the surrounding cellular tissue could be made out.

On March 19th last, assisted by Mr. Harry Littlewood, the resident surgical officer, and Mr. Croft, the resident obstetric officer, I removed the uterus entire per vaginam. After separating the vaginal attachment all round, and separating the uterus from the bladder, and opening the peritoneum before and behind, it was found impossible to retrovert the uterus through the posterior wound owing to its size, and therefore impossible, of course, to bring it down into view as in the first case. It was removed without any particular difficulty in the following manner: Being well pulled down, the broad ligaments were ligated and divided in segments first on one side and then on the other. A Spencer Wells' long-handled needle was used. Each portion of broad ligament divided allowed the uterus to be brought a little lower, in a zigzag fashion. No hæmorrhage occurred from the cut surfaces on the uterine side, although not protected by any ligature. The fundus was then brought down into view, one cornu first, and the Fallopian tubes and round ligaments ligated and divided, and the uterus completely separated and removed. It was now ascertained that the disease had spread up the right tube, and a coil of intestine, which was visible, was seen and felt to be studded with small cancerous nodules. Had it not been for the state of the bowel I should have at once opened the abdomen and removed the tube. The vaginal wound was brought together precisely as in the first case, the peritoneum being in both cases included in the sutures. The only difference was that at each side of the drainage tube were four smaller stumps instead of two larger ones. Each suture fastened in the wound two stumps. The silk-constricting sutures on the stumps were left about two inches long.

The patient recovered without a bad symptom of any kind. The temperature, which had been 102° and over before the operation, fell to 101° and 100° on the two succeeding days. The drainage tube was removed on the fifth day, and all the silk ligatures on the pedicles or stumps came away on the thirteenth and fourteenth days. Of course, the recovery of this patient is only temporary, but her death will be less painful than it probably would have been from cancer of the uterus itself; and meanwhile she has a short reprieve, for she was up and walking about in three weeks and a half, and is now at a convalescent hospital, feeling and looking fairly well. Probably the implication of the tube and bowel was recent, and if the case had been seen earlier, the ultimate result, which is unfortunately too certain, would have been different.

This operation has now, I believe, been performed over 400 times, and the records of a large proportion of these cases are accessible. Almost every conceivable variation in the details of the operation has been made. I propose, whilst giving more in detail the plan of operation followed in the two cases related, to allude to some of these variations, especially as the plan of operation recommended is not that of any one operator, but consists of what appear to me to be the best parts of all, combined so as to form a practical whole, with the addition of some points which, so far as I can ascertain, are new, but seem to me of practical importance and likely to conduce to success. The simpler the operation can be made, consistent with safety from hæmorrhage, the greater will be the success, because these patients are generally in bad health from hæmorrhage, and the duration of the operation is a very important factor. Next to the duration of the operation the most important or equally important object we should have in view is to keep the peritoneum free from contamination with septic and cancerous matter from the uterus.

I notice that the leading idea of most operators has been to avoid hæmorrhage. This I take to be a mistake, for the application of temporary ligatures and clamps, or pressure forceps, takes up time and is generally unnecessary. Forcible dragging of the uterus downwards arrests the circulation, as proved by the absence of hæmorrhage from the uterine side of the divided broad ligaments. It is advisable to prepare the parts by removing with a curette any loose cancerous masses in the neck a few days before the operation and by the use of cleansing antiseptic injections. The patient being in the lithotomy position, and the vagina washed out with rather hot water, for the purpose of preventing hæmorrhage as well as for the sake of cleanliness, in both cases I scratched with a suitable instrument the exact line of the anterior and posterior vaginal fornices. This gives the situation of the incisions, of which the anterior is important. The uterus being now pulled down into view by vulsellum forceps, the posterior incision should be made first. After an aperture is made through the vaginal wall the left index finger is to be passed through to serve as a guide to the scissors with lateral angle, with which the division is completed on each side quite up to the bases of the broad ligaments. Whilst the scissors are used the traction by the vulsellum should be relaxed. Now let traction be again made, and with a scalpel divide the anterior vaginal wall by a semicircular incision in the line of the anterior fornix just to reach the cellular tissue, so abundant here in front of the cervix. Let this incision be prolonged laterally to join the posterior incision at each side, but here the depth of the incision must not be more than one-sixth of an inch, and exactly five-sixteenths of an inch from the cervix.

The next step is to separate the bladder from the uterus, and, being warned by the experience of the first case, in the second I did not use the finger for the purpose of tearing through the cellular tissue. The finger, although sensitive, does not give the nicety required. There can be no better instrument for the purpose than an ordinary uterine scarifier a little bluntened. The small flat blade of this partly cuts and partly tears through the cellular tissue without throwing any strain on the bladder, the walls of which are very tender, being weakened by their separation from the uterus. When the finger is in the anterior wound and a catheter is introduced into the bladder, it will be felt how very thin the bladder wall is. When the peritoneum is reached, it is at once opened by the scarifier, or scratched through by the finger-nail, and the wound is then to be widened with the scarifier from side to side, until a finger in the anterior wound will meet a finger in the posterior wound at each side of the uterus, the broad ligaments only intervening. This is important on account of afterwards ligating the broad ligaments, and it cannot be done unless the posterior wound is made first.

When the anterior wound was made the peritoneum was opened, but when the posterior wound was made in both cases it was left intact, thereby preventing access of blood, cancerous or septic matters. This is a point of the greatest consequence. Before it is opened (which must now be done), the parts must be washed clear of everything. It may be inferred from most accounts of operations that this has not been thought of, but some operators have with the same object made the posterior wound last. The plan I have indicated, however, answers the end required better, for in making the anterior wound, which is a matter of delicacy, it is an advantage to be able to insert a finger into the posterior wound, especially in order to gauge the proper width of the anterior wound, and to steady the parts whilst it is made. The peritoneum is quite loose over the roof of the vagina posteriorly, so that it is actually difficult to open it as it yields before the finger.

Nearly all operators now either bring down the fundus through the posterior wound or through the anterior one. The former plan is obviously the best, because there is more room posteriorly; but I believe both plans are bad, because the cervix is pushed up as the fundus comes down, and by this somersault the cervix with its hurtful discharges has the chance of infecting the peritoneum. To avoid this Mr. Greig Smith of Bristol, who reports a case in THE LANCET of Jan. 1st of this year, even passed a sponge into the peritoneal cavity. The plan of removing the uterus cervix first avoids all risk to the peritoneum. It is the plan followed by Billroth and Martin, but the former ligates the ligaments by

mass ligatures—a more difficult and tedious and less secure way than that of ligating them in segments. The plan of bringing the uterus entirely outside adopted in my first case has the advantage of exposing everything fully to view, whilst equally with the plan of removing the uterus cervix first, directly downwards, it avoids the risk of septic infection of the peritoneum. It can only be done when the broad ligaments are elastic and free from any trace of past cellulitis, and when the uterus is not much enlarged. It is not mentioned by any writer on this subject as possible, nor in any account of operations which I have seen is it mentioned, except that Staude has published some cases in which, without the anterior wound being made at all, the fundus was retroverted through the posterior one, the cervix being thus not anteverted, as usual, and then, lastly, the anterior wound was made.

In order to avoid injury to the ureters, their exact distance from the cervix must be borne in mind. This is the merest fraction under half an inch. They are nearest the cervix, quite at the lowest part of the broad ligaments, and higher up three-quarters of an inch from the side of the uterus. This space is very small. It can be made a trifle larger by firmly grasping the broad ligament between the finger and thumb, when the ureter being of firmer structure than the surrounding parts escapes or is squeezed outwards a little. But we have to cut our coat according to the cloth, and it is absolutely necessary for the lowest ligature to be not further from the cervix than five-sixteenths of an inch. The uterus being now removed, we must sponge out the vagina and get an idea of the position and appearance of the wound. The left index is to be passed in to pull down the peritoneum anteriorly and posteriorly. The anterior is most important. With an Emmet's long needle-holder, and one of his needles, which, however, should be made an inch and a quarter in length, and curved slightly (to be had of Mayer and Meltzer, Bond-street, Leeds), a strong catgut suture is to be passed through the edge of the vaginal wall on the extreme right of the wound; then in order through the posterior flap of peritoneum, through two pieces of broad ligament stump (at opposite edges, so that they may not lie superimposed in the wound), through the anterior flap of peritoneum, and lastly through the anterior vaginal wall. These sutures should pass through the stumps at the further side of the constricting silk ligatures, so that when the wound is closed the latter are extra-peritoneal. Two similar catgut sutures at each side of the supra-vaginal wound are sufficient to bring it together and to fasten the pedicles in the wound. A drainage tube should be placed centrally, and fixed to the posterior vaginal wall low down by a suture. It can easily be removed by cutting this suture, without any disturbance or exposure of the wound. The ends of the catgut sutures which bring together the supra-vaginal wound should be cut short, but those of the silk constricting ligatures on the stumps should be left an inch and a half long and lying loosely in the vagina. These will come away in about a fortnight. The vagina, and especially the wound, should now be dusted lightly with iodoform, and the vagina plugged loosely with iodoform gauze. The drainage tube should be cut off so that the end is well within the vagina, lest air should enter the peritoneum. The end of the tube is to be packed round with absorbent wool. One advantage of leaving the silk ligatures on the pedicles so long is that in the event of secondary hæmorrhage the end of each pedicle could be examined separately by sight and any bleeding vessel taken up.

Much attention has been given by writers on this operation to the two questions of whether the peritoneum should be included in the sutures closing the vaginal wound, and whether a drainage tube should be used. A conclusion on these points can hardly be helped by elaborate statistics, for our knowledge of peritoneal wounds is quite sufficient from other sources to teach us that the peritoneum flaps should be brought down and included in the wound; but the result of statistics proves this almost foregone conclusion. There are other ways of doing this, as by using a continuous suture, which is said to be more quickly done, but I think this would seal up the parts rather too firmly. A little capillary exudation should be allowed.

There have been many modifications of the operation, which seem to me should be condemned. Such as removal of the cervix at the commencement of the operation, the use of mass ligatures either as temporary or permanent means of arresting hæmorrhage from the broad ligament, relying upon pressure forceps instead of ligatures for the same purpose, the use of elastic ligatures, putting ligatures on the broad ligaments with the uterus *in situ*, unnecessary ligating the vaginal roof before incising it, and especially leaving the vaginal and peritoneal wounds unclosed. On the other hand, the plan of bisecting the uterus and removing one half first, which has been followed by Müller of Vienna, Zweifel, and by Alexander Simpson of Edinburgh is a modification worth bearing in mind.

In conclusion, my object in this paper has been to try to work out the minute details of this operation, choosing from the various plans which have been previously followed those parts of each which seem most likely to conduce to success. It seems not improbable that the mortality may be considerably reduced. If it is properly done, there seems to me very little for the patient to die from, for the peritoneum can be guarded from sepsis by the methods I have indicated, and hæmorrhage can also be with great certainty prevented. Moreover, if the pedicles are treated extra-peritoneally and peritoneal surfaces everywhere lie together in the wound, it will be shut off almost at once from the general peritoneal cavity. By far the greatest number of these operations have been done on the Continent, and especially in Germany; but this arises from their being done unnecessarily, when supra-vaginal amputation would have given equal security with much less risk. For instance, out of nineteen cases of Fritsch's, sixteen were cancer of the cervix and only three of cancer of the cervix with enlargement of the body. The same proportion holds good with most German operators. In this country the operation has been performed comparatively seldom; but it has been generally confined to suitable cases—viz., cancer of the body or of the neck at its upper part. In Yorkshire it has, I believe, only been done four times, and the two cases related were the only successful ones; but I say this open to correction.

COMPARATIVE EXPERIMENTS BETWEEN THE ACTION OF PAPAIN (FINKLER) AND PEPSINE.

BY DR. D. FINKLER,
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PAPAIN (Finkler) is a ferment which is manufactured according to my specification from the plant called Carica papaya. It is an albuminous body, which under certain conditions can change albumen into peptone. The conditions which produce this change are very different from those under which pepsine and pancreatine produce the same effect. In order to demonstrate the effect of papain I shall indicate various experiments made by myself which will give an exact insight into the conditions of the effect and also a comparison of the effect of pepsine. For these comparative trials I used a pepsine of known best quality, most of the commercial pepsines being decidedly weaker than the one I used.

I. HAS PAPAIN REALLY A DIGESTING PROPERTY?

Experiment 1.—(*a*) Five grammes raw minced meat, 50 c.c. water, 5 c.c. of a 1 per cent. papain solution (1 gramme in 100 c.c. water). This mixture was put into the oven and kept for twenty-one hours at 38° Centigrade; it was then filtered. The filtered portion contains the albuminous substance of the meat turned into peptone, which is *not* precipitated by nitric acid, nor by ferrocyankalium or acetic acid; it is precipitated by tannic acid. The xanthoprotein and biuret reactions are well shown. The non-peptonised residue of the meat weighs when dried 0·1 gramme; therefore 90 per cent. of the solid portion of the meat has been dissolved in water. Of the albuminous substances of the meat, 87 per cent. were peptonised—which shows a very energetic degree of digestion. (*b*) For comparison, 5 grammes raw minced meat, 55 c.c. hydrochloric acid (0·2 per cent.), and 5 c.c. of a 1 per cent. pepsine solution were treated as above. After twenty-one hours, 70·6 per cent. of the albuminous substance of the meat was peptonised.

Experiment 2.—(*a*) Five grammes meat, 50 c.c. water, 0·5 c.c. of a 1 per cent. papain solution. After forty hours the non-peptonised residue of the meat weighed 0·19 gramme; of the albumen of the meat 77·7 per cent. was peptonised. (*b*) Five grammes meat, 50 c.c. hydrochloric acid (0·2 per cent.), 0·5 c.c. of a 1 per cent. pepsine solution. After forty hours the non-peptonised residue weighed 0·19 gramme; of the albumen of the meat 77·7 per cent. was peptonised.

Experiment 3.—(*a*) Ten grammes meat, 20 c.c. water, 1·5 c.c. of a 1 per cent. papain solution. After thirty-six hours, 73·5 per cent. of the albumen of the meat was changed into true peptone. (*b*) Ten grammes meat, 20 c.c. hydrochloric acid (0·2 per cent.), 1·5 c.c. of a 1 per cent. pepsine solution. After thirty-six hours, 18·0 per cent. of the albumen of the meat was changed into true peptone.

Résumé of the Three Experiments.

Ferment.	Digested albumen of the meat.	Time.	Proportion of the quantity of ferment to the meat.	Proportion of the quantity of the meat to the liquid.
Papain (Exp. 1) ...	87·0 %	21 hrs.	1 : 100	1 : 10
,, (,, 2) ...	77·7 %	40 ,,	1 : 1000	1 : 10
,, (,, 3) ...	73·5 %	36 ,,	1 : 600	1 : 2
Pepsine (,, 1) ...	70·6 %	21 ,,	1 : 100	1 : 10
,, (,, 2) ...	77·7 %	40 ,,	1 : 1000	1 : 10
,, (,, 3) ...	18·0 %	36 ,,	1 : 600	1 : 2

Papain therefore shows a more energetic peptonising power than pepsine, and especially so when the proportion of the liquid to the albumen is small—i.e., in the proportion of concentration in which food generally exists in the stomach and intestines. The great variability in the quality of commercial pepsine (some of which will, under the most favourable circumstances, not peptonise more than 20 per cent. of the albumen of the meat) gives papain (Finkler) also the preference, as it is always made of one uniform quality.

The peptonising of hard-boiled egg (egg boiled five minutes and rubbed down) is demonstrated by the following experiments, which were made in an oven at 38° Centigrade.

Experiment 4.—(*a*) Five grammes albumen, 50 c.c. water, 5 c.c. of a 1 per cent. papain solution. After sixty hours in an oven small residue—peptonised 95 per cent. (*b*) Five grammes albumen, 50 c.c. hydrochloric acid (0·2 per cent.), 5 c.c. of a 1 per cent. pepsine solution. After eighteen hours all peptonised = 100 per cent.

Experiment 5.—(*a*) Five grammes albumen, 50 c.c. water, 0·5 c.c. of a 1 per cent. papain solution. After sixty hours all peptonised = 100 per cent. (*b*) Five grammes albumen, 50 c.c. hydrochloric acid (0·2 per cent.) 0·5 c.c. of a 1 per cent. pepsine solution. After eighteen hours all peptonised = 100 per cent.

Experiment 6.—(*a*) Five grammes albumen, 10 c.c. water, 0·5 c.c. of a 1 per cent. papain solution. After forty-five hours peptonised 80 per cent. (*b*) Five grammes albumen, 10 c.c. hydrochloric acid (0·2 per cent.), 0·5 c.c. of a 1 per cent. pepsine solution. After forty-five hours peptonised 40 per cent.

Experiment 7.—(*a*) Ten grammes albumen, 20 c.c. of a 1 per cent. papain solution. After fourteen hours all albumen is dissolved. *Reactions*:—1. Boiling only produces a slight precipitate. 2. Xanthoprotein reaction succeeds very well. 3. Biuret reaction also shows very nice pink (rosy red). 4. Acetic acid and ferrocyankalium give slight precipitate; the albumen is therefore all peptonised = 100 per cent. (*b*) Ten grammes albumen, 20 c.c. of a 1 per cent. solution pepsine in 0·2 per cent. hydrochloric acid. Albumen dissolves slowly after forty-five hours; only 50 per cent. of the albumen is peptonised.

Résumé of the Four Experiments.

Ferment.	Albumen peptonised.	Time.	Proportion of quantity of ferment to albumen.	Proportion of the albumen to liquid.
Papain (Exp. 4) ...	95·0 %	60 hrs.	1 : 100	1 : 10
,, (,, 5) ...	100·0 %	60 ,,	1 : 1000	1 : 10
,, (,, 6) ...	80·0 %	45 ,,	1 : 1000	1 : 2
,, (,, 7) ...	100·0 %	14 ,,	1 : 50	1 : 2
Pepsine (,, 4) ...	100·0 %	18 ,,	1 : 100	1 : 10
,, (,, 5) ...	100·0 %	18 ,,	1 : 1000	1 : 10
,, (,, 6) ...	40·0 %	45 ,,	1 : 1000	1 : 2
,, (,, 7) ...	50·0 %	45 ,,	1 : 50	1 : 2

Result.—Hard-boiled egg is better digested by pepsine if the quantity of liquid be large in proportion. As soon, however, as a more concentrated mixture is employed, the superiority of papain is at once evident.

II. WHAT EFFECT CAN BE OBTAINED BY PAPAIN IN THE HUMAN BODY?

a. Concentration of the solution is of first importance.—It is impossible to create in the stomach and intestines such amount of liquid as would be favourable to the effect of pepsine; the conditions, therefore, are very much in favour of papain.

b. Importance of the reaction.—Pepsine acts in the stomach but not in the intestines, as in the latter the reaction is neutral or alkaline. Papain has little effect in the stomach, as the reaction there is acid; when, however, the stomach is neutral or alkaline papain will peptonise, while pepsine will be useless. The degree of acid reaction in the stomach varies greatly, especially in the case of a stomach out of order, in which case the reaction can be so highly acid or alkaline that pepsine would be of no value at all. In the treatment of stomach catarrhs we will, moreover, find that as a general rule the contents of the viscus have been rendered artificially neutral or alkaline by the administration of remedies, so that in these cases pepsine will have absolutely no effect. Papain, on the contrary, will act energetically.

c. Regarding the time available for the digestive ferment to act in the body.—In the case of pepsine this is necessarily very short, as the action ceases when the food enters the alkaline reaction of the intestines. In the case of papain, which can act well in alkaline reaction, the time is practically unlimited, as it continues acting on the food during the whole time it remains in the body.

For all these reasons the conditions for the effect in the human body are far more in favour of papain than of pepsine, and especially as under existing circumstances (high degree of concentration) papain has been shown to act much more energetically; it is only too clear that the preference should be given to papain as a digestive ferment for the treatment of dyspepsia. Besides for dyspepsia, the papain is of great importance in the treatment of diphtheria. Its effective power consists in the circumstance that no free acid need be present in the application, and further, that the moisture of the diphtheritic membranes is quite sufficient to allow the ferment to dissolve the solidified substances of the membranes. No other ferment has so far been able to obtain these results. It is on this account that many competent experimentalists and specialists have lately made observations as to these points. From all these circumstances there is no doubt that in papain we have a ferment which has a great future before it, and it is for this reason that I have made a special study of the manner of preparing the papain. I have had the satisfaction of obtaining the most favourable results from its use in the treatment of disease.

Bonn.

NOTES ON AN OUTBREAK OF BERI-BERI ON THE CHINESE TRANSPORT SHIP *TOO NAN*, STATIONED AT NEWCASTLE-UPON-TYNE.

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THE world-wide reputation of Sir Wm. G. Armstrong and Co. as gunmakers draws from time to time the gunboats of many of the nations to the Tyne. Italians, Spaniards, Chilians, Indians, and others have in their turn visited us, and whilst in most their advent and departure have been apparently a source of pleasure to all concerned, such has not always been the case. About eighteen months ago an Indian gunboat arrived in the Tyne in the cold season of the year, and within a very short time several of the sailors died apparently from cold, but the chief symptom of whose illness, it should be remembered, was hæmaturia. None of these cases were seen by the writers of this article. Two months ago the Chinese Government sent over in their transport ship the *Too Nan* 640 sailors to man two new gunboats built on the Tyne. This was not the first

visit of sailors belonging to the Chinese navy, nor is it the first during which the harmony of their stay here has been broken by the ravages of death amongst the crew. Two Chinese man-of-war's men died here about two years ago. The *Too Nan* had only anchored a few days in the Tyne, when the remains of three of her sailors were laid beside those of their countrymen in the Elswick Cemetery. Upon the minds of these Chinese sailors, who are by nature strongly bound to each other by ties of affection and friendship, and by whom death away from home and burial in a strange cemetery are regarded as completely destroying all hope for the future, the effect of the death of their comrades was most injurious. Those of them who were ill insisted upon being treated on the transport, in spite of the insufficient accommodation which the vessel offered, for the *Too Nan* had formerly been in the Merchant Service, and was thus ill adapted for the accommodation of such a large number of sailors even in health.

It appears that soon after having put to sea an outbreak of beri-beri, or as it is sometimes called kakké, occurred on shipboard. Two of the twelve sick men died whilst navigating the Red Sea—one on the Red Sea and the other at Suez—and soon after their arrival in Newcastle other three died from the same disease. Eleven were still suffering from beri-beri on the arrival of the ship, and were placed under the care of Dr. Slater, the native medical men preferring that local medical assistance should be procured, as mentioned by your Northern Counties correspondent. The three cases which died were evidently of a very acute character, there being most urgent dyspnœa, dropsy of the feet and legs, feeble pulse in all of them, followed by sudden death from syncope. Unfortunately no post-mortem was allowed. Nearly all the other cases were of a subacute type, and belonged to what Simmons would call the wet variety, so named from the general hydræmic condition of the blood and distension of the general areolar tissue with serum. Anæmia and anasarca are said by Sir Joseph Fayrer to be the general symptoms of the disease, and these, attended by numbness, pain, heaviness, and loss of muscular power, were what presented themselves in all our cases. After a feeling of malaise, which had lasted several days, the sailors noticed that their feet and ankles were swollen, as were also their faces. With this was experienced a sense of great weariness and inability for effort. In addition to the œdema of the legs, they all complained of pain and numbness down the front of the leg and ankle. There was no anæsthesia, nor from first to last did the paresis pass into paralysis. Great pain and stiffness were complained of in the hamstring tendons and the muscles behind the knee-joint. A most trying test for them was to ask them to rise from a kneeling to a standing position. Such exercise was always with great difficulty accomplished, and, in the case of some, was so severe that fainting was nearly induced, whilst in others the muscular effort called forth was such that big beads of perspiration stood out all over. In spite of the peculiar bronzing of their skin, the appearance of the sick men was that of anæmia. Breathlessness on the least exertion was a noticeable feature, and in all of them the pulse was small and feeble, the usual average being 72 to 80. We did not meet with any cases presenting the small quick pulse that Fayrer speaks of, nor in any of them did the temperature rise above the normal. The urine, though high coloured, remained fairly normal as regards quantity and specific gravity, and from first to last remained free from albumen. The furred and white-coated tongue which most of the patients presented did not in the least interfere with the appetite, which continued good all through the period of observation. Brain symptoms may be said generally to have been absent. The same remark applies to the lungs. In all the cases there was distinct evidence of dilatation of the ventricular cavities of the heart; and while no venous hum was heard in any of the cases, in a few of them a well-marked systolic murmur was heard over the pulmonary artery and in two of them a systolic murmur over the mitral orifice, which disappeared under treatment. In all the heart's sounds were feeble. The liver was small, and what struck both of us was the very *marked enlargement of*, and tenderness occasionally felt on pressing upon, *the spleen*. Beyond slight epigastric pain being complained of by one or two, our attention was seldom drawn to the abdomen. The bowels acted normally. The œdema of face and of the feet and legs was one of the most persistent physical signs, but in none of the cases was there ever evidence of the presence of fluid either in pleura or pericardium. A microscopical examination of the blood did not reveal any great reduction in the number of its corpuscles—the white were slightly increased, and the red not only formed rouleaux badly, but were extremely pale, and of very varying size; some larger, others smaller than in health. There was a marked deficiency of hæmoglobin, the colouring matter in some of the cases being present to the extent of only 60 per cent. of the normal.

The crew of the *Too Nan* is composed of two different types of Chinese, each speaking its own dialect, and while not racially distinct, all of them being Chinese, they are yet distinguished from each other by certain marked characteristics. The men who belong to the South of China are short, thick-set, and dark-coloured; those from the north are taller and of much fairer complexion. Now, the interesting point about the epidemic is that the disease attacked the South countrymen alone. Prior to coming to Newcastle these sailors had been to Corea, the projecting portion of the mainland which forms the northern and eastern boundary of the Yellow Sea. Beri-beri is endemic in certain parts of Asia—notably, Ceylon, certain parts of India, Burmah, and the Malayan Peninsula. We had no positive information conveyed to us by the officers of the *Too Nan* of the existence of beri-beri in Corea, but the impression was prevalent amongst the men that the disease had been caught there, and not in the Red Sea, where it first manifested itself with such fatality, and where it is said to be endemic. The fact of the disease being confined to one class—viz., the men who had been to a part of Asia which, though not absolutely known to be infected, is now by the officers regarded as having been so,—the protracted period of incubation, and the uniformity of the symptoms and signs, led us to regard the illness as being of a specific nature; and from the hydræmic condition of the blood and its deficiency in colouring matter and the very marked enlargement of the spleen, we feel inclined to regard beri-beri as a disease of a distinctly malarial character.

All of the cases did well under treatment. What Dr. Slater found of the greatest service was a good nourishing diet, such as beef-tea, eggs and milk, mutton and beef. Brandy and whisky also were allowed—half an ounce to an ounce—three times a day. Medicinally, iron and quinine in some, and arsenic in others, with cardiac stimulants. They were more thickly clad, and kept warmer. They had experienced very changeable weather, and this had, no doubt, greatly influenced the disease. The diet of the ship had consisted of rice, salted fish and pork, and occasionally fresh pork, three times a day. Milk they all dislike. Tea is taken occasionally.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

COMPOUND DISLOCATION OF ELBOW JOINT; EXCISION; SUTURE OF ULNAR NERVE.—REMOVAL OF LOOSE BODY FROM KNEE JOINT.—POST-ACROMIAL DISLOCATION OF HUMERUS; REMARKS.

(Under the care of Mr. WALTER RIVINGTON.)

IN our issue of July 2nd, page 15, we published some cases illustrative of the surgery of the ankle joint, which had been under the care of Mr. Rivington. This week we bring forward examples of injury of the shoulder and elbow joints, also the successful removal of a loose body from the knee joint after incision. The compound dislocation of the elbow joint, though extensive, was rendered more serious by the damage to the ulnar nerve. The result of treatment was very satisfactory. We refer our readers to the account of the case and also to the remarks on it. The post- or sub-acromial dislocation of the humerus is a variety of displacement rarely seen.

CASE 1. *Compound dislocation of right elbow joint; damage to ulnar nerve; primary excision; suture of ulnar nerve; recovery.*—Charles B——, aged fifty-six, was admitted into the London Hospital on July 12th, 1886. He had fallen off an engine, and the right elbow joint had been opened by a jagged laceration on the inner side and behind. The triceps muscle was torn away from its attachment to the olecranon, and the ulnar nerve was exposed for several inches. The internal condyle was crushed; the forearm was displaced backwards; there was no shock. Temperature 99°.—13th: The elbow joint was excised by enlarging the wound on the inner side of the arm. The carbolic spray was used. The triceps was stitched, and a drainage tube was passed through to the outer side. It was feared that the ulnar nerve would lose its vitality in the middle of the exposed portion, but as it was entire it was left untouched. The arm was placed on an angular splint.—14th: Feeling in the hand imperfect; wound looked well.—25th: Passive movement; very little feeling in parts supplied by the ulnar nerve.—29th: Sensation of little and inner side of ring finger quite lost.—Aug. 13th: Spray left off.—Sept. 9th: Wound dressed and looked extremely well. Movement of the arm very free.—Oct. 4th: Some discharge from elbow; swelling of forearm and hand less. Extension, pronation, and supination limited.—13th: Made out-patient.—Nov. 17th: Readmitted for operation on ulnar nerve. As flexion and extension of the wrist and fingers and extension of elbow joint were not free, passive movement was directed to be performed by the dresser.—25th: On pressure over the cut on back of arm a sensation of pins and needles was conveyed to the little and ring fingers.—Dec. 3rd: Ulnar nerve cut down upon and traced downwards. It terminated in a bulbous extremity connected by fibrous tissue to the lower part of the nerve, and the nerve ends were bound down to the bone. The nerve ends were trimmed and united with carbolised silk suture. A straight splint was adjusted in front of the elbow and the arm was slung.—7th: Sensation had returned in ulnar side of ring finger.—Jan. 7th: Wound healed; no sensation in little finger.—14th: Constant current to ulnar nerve.—Feb. 8th: Ulnar nerve exposed again, and found united. On galvanising it the muscles of forearm supplied by it contracted. The nerve was freed from its under attachments, and the wound was sewn up.—12th: Sensation improving.—27th: Scar of incision only left. Galvanism had been continued daily. The skin over the forearm was more sensitive than over the hand.—April 21st: Flexion and extension of forearm at the elbow joint excellent. Pronation and supination could be passively performed for about half the usual range. Sensation was restored as far as the base of the little finger on the inner side of the hand. As the patient had a very useful arm and was anxious to go home he was soon afterwards discharged. The patient was shown to the members of the district branch of the British Medical Association.

Remarks by Mr. RIVINGTON.—In cases of compound fracture and compound dislocation implicating the elbow joint, the choice of the surgeon lies between an endeavour to save the limb without operation by antiseptic treatment, excision, and amputation. As amputation is reserved for the hopeless cases, the real question to be decided is usually whether excision should be performed, or whether the surgeon should trust to nature, aided by antiseptics, for the repair of the injury. In other words, the question lies between securing a stiff or a movable joint, for it is quite doubtful whether at the present day the patient runs any increased risk from submitting to the operation of primary excision in cases of bad compound fracture or dislocation. The advantages of a joint admitting, at least, of flexion and extension are so obvious that the surgeon would always endeavour to obtain the boon for the patient whenever he felt that he was not subjecting him to avoidable danger. The usual method of excision of the elbow joint adopted by surgeons is by the single straight incision through the triceps. There is another, and perhaps a better, method of excision by a single incision on the inner side through skin and fascia only, leaving the triceps untouched, and chiselling through the olecranon process and turning it aside with the attachment of the triceps. In order to obtain room for exposure of the ends of the bones the upper part of the ulna is cleared, the anconeus and fascia covering it being detached as far as may be necessary. The triceps is simply separated from the back of the humerus after the joint has been excised; the end of the olecranon may either be united to the shaft of the ulna by wire, or may be dissected out and the attachment of the triceps stitched to the fascia of the forearm. This was practically the method adopted in the foregoing case, the wound for exposure of the ends of the bones having been already made. The triceps muscle having been torn from its bony attachment, it was impossible to save the end of the olecranon, but the triceps was stitched to the fascia, and the continuity of the fascia on the outer side, the importance of which was well emphasised by Mr. Maunder, was preserved. For some time I have shown this second method of excision of the elbow to the class of operative surgery, but have not had an opportunity of practising it on the living subject, except in the case just related. The chief disadvantage, so far as I can see, consists in a freer exposure of the ulnar nerve than in the method of excision by a single median straight incision. In the latter the ulnar nerve, though felt, may not be seen at all. In the present case the ulnar nerve had been already dissected out for four or five inches, and it is, therefore, no wonder that it lost its continuity after the operation. By secondary reunion it had recovered its functions when the patient was last seen, except as regards sensation in part of the little finger.

CASE 2. *Loose cartilage in knee joint; removal; cure.*—A. L. D——, aged twenty-nine, ship's cook, was admitted in May, 1877. The patient was a Chinaman, and spoke English imperfectly. Eight months before in Japan he was laid up for nine months with some affection of the knee joint, for which some incisions were made in the knee. About four weeks before admission he noticed a lump in his left knee joint which seemed to catch him in walking, and gave him extreme pain. Shortly afterwards his knee joint became very much swollen. Several old scars were seen about his knee joint, which was enlarged and distended with synovial fluid. A foreign body about the size of a small chestnut, very freely movable in all directions, excepting posteriorly, was detected. It slipped freely from one side of the joint to the other.—May 10th: Mr. Rivington fixed the loose body with his fingers on the inner side of the internal condyle, and made an incision about two inches long over the body under the carbolic spray. Two ligatures were applied to bleeding vessels before the synovial membrane was incised. A large quantity of synovial fluid was evacuated, and the foreign body was then removed with finger and forceps. The body consisted of a flat disc of cartilage partially ossified. The synovial membrane was closed by catgut and the skin wound by silk sutures, and antiseptic dressing was applied. The joint filled again with fluid after the operation. The wound healed rapidly without suppuration, and the temperature was normal throughout. The patient was discharged before the end of the month.

CASE 3. *Post-acromial dislocation of the shoulder joint; reduction.*—J. S——, forty-seven, hammer man, was walking along a plank not a foot from the ground, empty handed, when his foot slipped and he fell to the ground. He put his right hand out to save himself, and the palm came in contact with the ground with considerable violence; the elbow joint bent, and he rolled over on to his shoulder. When he got up his hand "felt dead," but thinking that it was only bruising that would pass off, he went on working with his left hand, using the right as little as possible. However, he found the power did not come back to the arm, so he left off work. He experienced considerable difficulty in getting his coat on, and he suspected all was not right. The day following he attended at Miller's Hospital, Greenwich, where two attempts were made at reduction, during one of which the patient was anæsthetised. He was then informed that it was all right now, and was sent away. However, he was unable to use the arm the next day, and continued in this condition until he came to the London Hospital, where he was admitted twelve days after the accident.—April 16th, 1887: Present condition. The whole shoulder appears larger and more rounded than the other, the curves less abrupt. The fold of the axilla is higher on the right side. Behind appearances are more marked. The outline of the shoulder is very prominent and rounded at the back part, while there is some flattening internally. On placing the hand on this prominence and rotating the humerus at the elbow, the prominence is felt to rotate to an equal extent. There was half an inch shortening on the right side, but the left humerus had been fractured at the elbow in 1854, and the measurements are therefore put on one side as unreliable for diagnosis. As regards movement, the patient is able to put his elbow close to his side; indeed, that is the position usually

adopted. He is able to cross his arm over his chest, but attempts to raise the arm in front are almost instantaneously checked. Abduction is also impaired. What movements there are are partly of the scapula on the chest. Extension is limited. Abduction is performed by the aid of the scapula to a great extent. The patient is unable to get his elbow behind the vertical axis of the axilla, and is unable to put his hand to his head, the back of his neck, or behind him. Rotation inwards and outwards, especially outwards, are less free than on the left side. Circumduction is also very limited. There is never much pain. Some crackling crepitus is felt on manipulation, but this is obtained with equal ease in elbow and left shoulder. The general health is good. In this condition the patient was shown to the members of the district branch of the Metropolitan Branch of the British Medical Association.—April 22nd: The patient was anæsthetised, and Mr. Rivington reduced the dislocation by means of two jack towels, one to steady the trunk, the other round the arm. With the sole in the axilla, extension was made combined with rotation. The reduction was easy, and took place without snap. The head of the bone slipped out again on rotation inwards and on carrying the arm across the chest. It was, however, easily replaced. The arm was bandaged to the trunk in the position of extension, the elbow was flexed, and the forearm fixed on the chest. In about a fortnight the patient was discharged cured.

Remarks by Mr. RIVINGTON.—The distinction made by Malgaigne of the backward dislocations as comprising two forms—sub-acromial and sub-spinous—appears to me to be just, for the symptoms attending the two varieties are essentially different. In the sub-spinous the flattening of the shoulder and prominence of the acromion are much more marked than in the sub-acromial, indeed, in the latter it may not be marked at all. Looking from the front in the present case it was not easy on cursory inspection to detect any difference between the two sides as regards the contour of the shoulder. Moreover, the elbow appears to be raised from the side in the sub-spinous, and not capable of being approximated, while in the sub-acromial it is applied or can be brought to the side. It is also stated that in the sub-spinous dislocation the axis of the bone is directed backwards, nearly horizontally. In this case the patient could not carry the elbow behind the vertical axis of the axilla. Lastly, the position of the head of the bone is different altogether. For these reasons I maintain that the two varieties should be distinguished. Doubtless they run into each other, but in typical specimens of each there are the marked differences mentioned. I do not think that the term "*sub*-acromial" is a happy one, for the head of the humerus naturally lies under the acromion, and it is from the head projecting backwards behind rather than under the acromion that the variety is produced. Hence, I have named the dislocation "post-acromial" instead of "sub-acromial." A good deal of discussion has taken place in regard to the direction of extension in dislocations of the shoulder, and some have endeavoured to connect their names with the adoption of right-angled traction, vertical traction, and the like. The intelligent surgeon will vary the direction of traction in each case according to the position of the axis of the bone and the special needs of each case. Sometimes one direction of traction will be advantageous and sometimes another, and sometimes a combination of all may be advantageous. In reducing an old dislocation of the shoulder some years ago (the case was published in THE LANCET), I varied the direction of traction by directing my assistant to move in the arc of a circle while extension was fully maintained, and I kept my arm in the axilla to act as a lever. I believe this method to be original, but I have not yet assigned a name to the method. Probably "circumductory extension" would be as good as any.

LIVERPOOL INFIRMARY.

A CASE OF CEREBELLAR ABSCESS; DEATH; NECROPSY; REMARKS.

(Under the care of Dr. MCMURRAY.)

J. W——, aged twenty-two, was brought in a cab to the workhouse on the 25th ult., at 7.30 P.M., and was taken to the waiting-room. When seen he was sitting on a form with his arms crossed, and his chin resting on his chest. His tongue was coated, eyelids drooping, pupils dilated, the right more so than the left. On raising his head, which he did with difficulty, there was internal strabismus of the right eye, which disappeared when he looked downwards. The hearing was more acute on the left than on the right side. He was unable to stand alone, but could do so when supported on each side, and could also walk when supported, but appeared not to know where he placed his feet. When in the upright position his head was thrown back and his neck and back kept rigid. When asked if he were in pain, he said, "Yes," and when asked where, he did not answer, but put his hand to his occiput. He could give no history, and did not answer any questions but the one, he seemed unable to comprehend the other questions put to him, or to collect his ideas. He was sent to the ward, and seen as soon as he was put in bed. He was then throwing his arms and legs about and putting his hands to the back of his head. He would not lie with his head on the pillow, but kept it hanging over the side of the bed. In the course of an hour he became quieter, but refused to swallow, and lay on his back with the eyes closed and his hands behind his head. At 10 P.M. he was unconscious and delirious. At 12.30 he was in the same position, but moved his head from side to side at intervals. He remained in this condition till 5 A.M., when he died.

History.—His friends could give very little information about his illness. He had been with the fishing fleet off Kinsale, and had written to his wife a fortnight previously to his admission here that he could not continue at his work much longer owing to the increasing pain in his ear. This pain he had complained of since November last. No history of discharge from the ear could be obtained. He arrived at Liverpool on the 25th ult., and during the passage remained in his berth, refusing to take anything. On arrival he was put into a cab and driven to the Sailors' Home, and then sent here.

Necropsy.—Body well nourished. No marks anywhere except those of vaccination on the left arm. On removing the skull-cap the vessels of the meninges were congested, and the meninges adherent to the superior frontal gyrus of each hemisphere; a little serous effusion on upper surface of each hemisphere. On removing the brain the vessels on the surface were congested, while the brain substance on section was paler than usual. A portion of the right hemisphere of the cerebellum was occupied by an abscess, which extended from the outer end of the corpus dentatum to the horizontal fissure, the meninges at that spot showing very little inflammation; but a small portion of the petrous bone immediately above the meatus auditorius internus was roughened, evidently from inflammation. The superior petrosal sinus was blocked up by a firm coagulum. No apparent disease of meatus. Chest muscles very dark in colour, right pleura adherent, lung bronchitic on section. Left pleura and lung healthy, but both lungs very dark in colour. Heart normal, but dark in colour. Liver enlarged and friable, dark on section. Gall-bladder contained a small quantity of bile. Spleen enlarged and almost black. Kidneys large and very dark in colour, but apparently good. Bladder contained six ounces of urine. Stomach contained half an ounce of brownish coloured fluid. Lining membrane healthy. A small quantity of fæcal matter in the small intestine; large intestine empty.

Remarks by Dr. MCMURRAY.—Although the history of this case is so imperfect, yet I think there is sufficient to show there had been disease of the ear, which set up inflammation in the petrous portion of the temporal bone, and extended to the superior petrosal sinus, causing thrombosis, that the inflammation extended from that point to the cerebellar meninges, and thence to the white substance of the cerebellum. Retraction of the head with rigidity of the muscles is a sign of cerebellar disease, but in this case the rigidity and retraction were present only when the patient was in the erect position, when sitting the head was bent forward, and when in the recumbent position, although the head was retracted it appeared to me to be due more to the patient being easier with it in that position than to contraction of the muscles, and for this reason when he placed his hands behind his head, he supported the head with his hands, and there was no rigidity of the posterior muscles of the neck. Vomiting is another sign, but there was none in this case, although it might have been present before his admission. Loss of coördinating power was present, but I do not think it could have been of long-standing; and for this reason, that it would have incapacitated him for work much sooner. The very dark

colour of the muscles, lungs, kidneys, and other organs was remarkable; it was not due to hypostasis, but affected every portion of each organ, and yet during life there was neither cyanosis nor increased rapidity of inspiration; the weather was not warm at the time, and the post-mortem examination was made within thirty hours of death.

SAMARITAN HOSPITAL FOR WOMEN, NOTTINGHAM.

A CASE OF RADICAL CURE OF UMBILICAL HERNIA.

(Under the care of Mr. H. MICHIE.)

MRS. H—— was admitted with umbilical hernia of ten years' standing, during the last six of which it had been irreducible, and lately the patient said that she had suffered several attacks of obstruction of the bowels, with the symptoms of strangulation, these attacks occurring with increased frequency. The hernia having become strangulated, taxis having failed to reduce it, and the symptoms having become urgent, Mr. Michie performed the following operation. An incision extending from the upper to the lower border of the hernia, eleven inches long, was made down to the sac, which was then also freely laid open. The contents of the sac were the omentum, adherent to the walls of the sac, the transverse colon, the greater part of the ascending and descending colon, and small intestine, which was also adherent at several parts, some of the adhesions being very firm. A knuckle of small intestine at the lower border was constricted and of a slightly livid hue. The hernia could not be reduced. The upper margin of the umbilical opening was freely incised, the whole of the omentum removed after being ligatured in sections, the adhesions of the bowel to the sac separated, and after the bleeding, which from some parts of the bowel was considerable, had been stopped by pressure forceps and sponge pressure, the bowel was returned into the abdomen; the redundant sac and skin were removed, the margins of the umbilical opening were brought together by four deep, stout, catgut sutures, and the skin wound by fine silk. The patient has made an excellent recovery. She was not sick once after the operation; the bowels were moved every morning by a small enema of soap-and-water. The temperature remained normal throughout, and the highest pulse was 96 on the second night.

Remarks by Mr. MICHIE.—I had at first intended to treat the wound as in any ordinary abdominal section, but the patient was so stout that I had not a needle long enough to go through the whole thickness of the abdominal wall, hence the reason for using both deep and superficial sutures. No opiate was allowed either before or after the operation, an important element, I think, in the success of the case. Of course sufficient time has not yet elapsed to say that the cure is permanent, but I can see no reason why it should not be so, or to suppose that this woman will not have as much chance of freedom from a hernia as, for instance, a case of ovariotomy. In the text-books operation for strangulated umbilical hernia when the sac has been opened is said to be attended with an excessively high mortality, and one can easily understand why this should be so in a case where an operation for the radical cure has not been performed; but by carrying out at the same time some such proceedings as were adopted in the present case, we get rid of one at least, and I think two, of the great dangers. These two greatest dangers are, I feel certain, mechanical injury in effecting reduction, and entrance of discharge from the wound into the peritoneal cavity. Having determined upon such an operation, it need not give us much concern to make the incision through the constriction as free as we like. We may make it an inch or two long if we please. Now, with this free incision reduction can be effected with the greatest ease, and so we get rid of the first great danger—mechanical injury. By coaptation of the edges of the peritoneum by means of sutures we produce a radical cure, and at the same time get rid of the second great danger—discharge from the wound into the peritoneal cavity. In a case of strangulated umbilical hernia, where the taxis has failed after a reasonable trial, such a method of procedure as was adopted in this case, and which I have endeavoured to describe, appears to me to be the rational course to pursue; and when done early, before gangrene has taken place, I feel certain that such an operation is as safe as, I believe, it is sound in principle.

Medical Societies.

MANCHESTER CENTRAL MEDICAL SOCIETY.

AT a meeting of this Society on April 19th, Dr. OWEN showed an unusual case of Purpura Hæmorrhagica. The patient, a well-grown girl aged eleven years, had suffered more or less from hæmorrhages for about twelve months. Hæmorrhage from the bowel occurred first. This lasted only a few days, and had not recurred. Epistaxis followed occasionally, but during two months previously to her admission to the Clinical Hospital it had occurred daily, excepting three or four days, during which interval there was bleeding from the left ear. Bleeding from the ear had already occurred upon one day. She had never had purpuric spots upon the body, or swelling of the joints. There had been no bleeding from the mouth. Hæmophilia and purpura were entirely absent from her family history. Her mother was not hæmorrhagic. The girl was not anæmic, and the heart was healthy, and free from murmur. Upon admission she was treated with solution of arsenic, and advised to take freely of oranges and fresh vegetables. She had greatly improved under this *régime*. The special interest in this case rested on the absence of purpuric spots. Dr. Owen pointed out that mucous hæmorrhages, and especially epistaxis, frequently preceded the appearance of purpura, but that in almost every case recorded the spots, sooner or later, occurred as a striking feature of the complaint. The rarity of hæmophilia in the female, and its entire absence from the family history of the patient, excluded that disease from the diagnosis. There was no enlargement of the spleen, no anæmia, and no deterioration of the general health. It appeared impossible to place the case under any other category than that of purpura hæmorrhagica without the spots.

Mr. BISHOP showed a woman suffering from Osteitis Deformans. The bones mainly involved were both tibiæ; the femora, especially the right; the clavicles; the spine; and, but slightly, the right radius and skull. The patient was forty-nine, and had noticed the changes in her limbs for thirteen years. She attributes the results seen to falling over a cat, when, as she believes, the ankle was dislocated. The differences between osteitis deformans and rickets, as also those between it and osteomalacia, were pointed out. The woman shown, with the exception of any marked cranial enlargement, was a very good specimen of this rare disease.

Mr. BAIN read the notes of a case of Corporeal Endometritis, of which the following is an abstract:—L. C——, aged forty-three, married; has had four children and ten miscarriages. No history of syphilis, but several members of her family died of phthisis. Normally the menstrual period lasts about a week, and she loses about ten ounces. The first labour was instrumental; the child died from injuries received during delivery. The perineum was torn, but the laceration was not observed for some time after. The patient attributes all her subsequent illnesses and misery to this accident. Five consecutive miscarriages followed. Her health during this period was most indifferent. After her last miscarriage she had repeated attacks of flooding for some months. Four years ago in March she had a miscarriage. In the following July she again miscarried, and subsequently suffered from an enlarged prolapsed anteverted uterus, for which an air ball pessary was employed. The pessary produced considerable irritation. She has been more or less confined to bed ever since. When she came under Mr. Bain's care, two years ago, she was exceedingly weak and emaciated, and suffered acutely from indigestion. She had continuous backache and severe pain in the right ovarian region, and shooting down the right leg. She could not move in bed without aggravating the pain. Her menstrual periods lasted about a week, accompanied with intense pain and a profuse discharge—about a pint and a half. During menstruation her face seemed altered in appearance, and the prostration was extreme. On examination, the vagina was exquisitely sensitive. No matter how gently the finger was insinuated, it set up a severe aching, which lasted for about four hours. The cervix was enlarged, swollen, and tender, the os slightly lacerated and granular. The body of the uterus was elongated and bulky. The fundus was anteverted. The right ovary was enlarged and intensely tender. The treatment that had been

adopted consisted of hot water injections, glycerine plugs, belladonna pessaries, tannin pessaries, lead lotion, borax and alum lotions. Mr. Bain began by applying carbolic acid to the interior of the uterus; occasionally substituting iodine for the carbolic acid. The discomfort set up by these applications increased the prostration and destroyed what little appetite the patient had, so all local applications were stopped, and tonics and ergot prescribed. She gradually improved, and she is now five months advanced in pregnancy. The sensitiveness of the vagina disappeared when the patient became pregnant.

At a meeting on May 17th, Dr. WALTER read a paper upon the Treatment of Post-Partum Hæmorrhage.

Mr. RAILTON read a paper upon the Medicinal Treatment of Epilepsy. He remarked that, although the bromides were adequate to arrest the attacks in most cases during the early stages of the disease, they were often ineffectual in cases of longer standing, or, if not actually ineffectual when administered in moderate doses, had such an injurious effect, both mentally and physically, that it became a question whether the remedy was not worse than the disease. After adducing various cases in illustration, first, of the occasional complete failure of bromide of potassium to arrest the attacks, even when given in doses reaching to an ounce and a half of the drug at a time, and, secondly, of the extreme susceptibility of some constitutions to the depressing effects of the bromides in very moderate doses, he cited instances showing the good effects to be obtained by the combination of belladonna (given in the form of Trousseau's pill) with bromide of potassium, the two drugs combined appearing to be able to arrest the attacks in every case in which they were tried, without having the slightest injurious effect upon the mind or general health. Dr. Railton recommended the pill to be given early in the morning, on waking, in doses commencing with extract of belladonna and bromide of potassium, of each a quarter of a grain, which might gradually be increased for an adult, if necessary, to a grain and a half of each, without any ill effects. The bromide might be given two or three times a day in the smallest doses, which were effectual, never exceeding one and a half drachms in the twenty-four hours.

Reviews and Notices of Books.

Hip Disease in Childhood: with special reference to its Treatment by Excision. By G. A. WRIGHT, M.B., F.R.C.S. With Forty-eight Original Woodcuts. Pp. 246. London: Longmans, Green, and Co. 1887.

HIP DISEASE is a subject of great interest, as much by reason of its pathological obscurity as on account of the difficulty of adequately treating it. It is unfortunately a disease of the poorer classes—in its severer forms almost entirely so. Under "General Considerations," our author says the influence of age is the first and most striking of the predisposing causes. But if this were really the case, would not hip disease be just as common among the better classes and among country-bred children as among the poorer and town-bred children? We are told, however, that "hip disease is enormously more common among the poorer classes, for obvious reasons: worse hygienic conditions, less care if injured, greater liability to injury, and in many cases a worse inherited constitution are sufficient to account for the excess." In this we fully coincide, and think that the "social status" rather than age should stand at the head of predisposing causes.

In discussing etiology and pathology we notice with satisfaction that the author favours the now generally accepted view that hip disease begins in the bone: "An acute, subacute, or chronic inflammation of the upper epiphysis of the femur or its neighbourhood is by far the most common condition." He summarises the published views of most leading surgeons, and discusses them critically. The cases which recover without suppuration he regards as traumatic simple synovitis. Tubercle is held to be the real lesion in the great majority of cases grafted on to or associated with progressive disease of bone, acetabulum, or femur—the latter the more frequent. This section well summarises our present views, and we can recommend its perusal and careful study. It is enriched with a number of drawings illustrative of the disease at the period of excision. The sections on symptoms, diagnosis, and prognosis are all good in their way, though they are founded largely on a hospital experience, and must therefore be taken from this standpoint.

In such a work as this, avowedly written with special reference to treatment by excision, we ought not to be disappointed that the question of treatment by rest has been somewhat disregarded. It is mentioned only to be disposed of in a few lines, and this notwithstanding the obvious fact that the author adopts and approves of the method in certain cases and at certain stages of hip disease. We think it would have been well to have differentiated a little more carefully the class of cases in which rest may be reasonably tried and persevered with. The author's experience is clearly among children of a very poor kind, in whom the reparative power is very low, and in whom disease, especially of bone, when once set up, is with difficulty arrested. As bone disease is shown to be the most frequent cause of hip disease, it follows that in a considerable proportion of cases simple rest in bed alone is inadequate treatment, even when combined with aspiration or incision into the joint. Mr. Wright criticises the results obtained at the Alexandra Hip Hospital, on which the Clinical Society's report and conclusions mainly rested, as somewhat misleading, as giving results such as may be obtained in private practice, but which are impossible in hospital practice. With this view we are inclined to agree. A considerable selection is undoubtedly made and only such cases admitted as are likely to benefit by rest.

We think Mr. Wright would have added to the value of his book if he had contrasted different forms of disease in their initial and early stages. He points out how the statistics of operation are rendered unfavourable by the fact that cases must be included which are operated upon at a stage of the disease when a really favourable issue is impossible by reason of the extent of the disease. What we want is to be able to diagnose early the cases which are likely to progress from bad to worse—cases in which rest is not an adequate treatment, and in which more radical measures will, sooner or later, be required.

The author tabulates 100 cases of excision, and in an appendix gives a summary of the cases. The reader will here find much that goes to justify both the doctrine and practice which Mr. Wright advocates in the body of the work. The book will be found useful and interesting to all those who have much to do with children's hospital work, and to such we cordially recommend it.

On Cancerous Affections of the Skin: a Treatise on Epithelioma and Rodent Ulcer. By GEORGE THIN, M.D. London: J. and A. Churchill. 1886.

IN this monograph Dr. Thin has succinctly given a *résumé* of the history, description, varieties, histology, etiology, diagnosis, and treatment of these neoplasms, and has set forth clearly his own views. He recognises the deep-seated, or infiltrating, and the superficial forms of epithelioma, but holds that the rodent ulcer should be regarded as a disease distinct from the superficial form of epithelioma. He insists that in some cases the differential diagnosis for a time is very difficult, and in some impossible at present; so that such confusion has much obscured the discussions on the nature of rodent ulcer. His views on the latter disease are well known. After pointing out its distinctive clinical features, Dr. Thin describes two markedly contrasted forms of cell grouping, the one uniformly tending to assume a cylindrical form, with giving way and disappearance of the

enclosed connective tissue; the other in which the new cells are found in clusters of indefinite shape situated in spaces formed by the separation of the bundles of connective tissue, and in which the groups grow by the cells extending (at first in single file) between the bundles. In the latter form the columns do not penetrate the deeper layers of the cutis, where the bundles are thick and strong. He is confident that the histology of rodent ulcer will come to be recognised as specifically distinct from that of epithelioma, for the cells of the new growth have distinctive characters, and differ from those found in epithelioma in other respects than dimensions. Amongst other things, the cell protoplasm is comparatively scant. The cells never enlarge into the flat horny cells characteristic of epidermic epithelioma, never become "prickle cells," and never form true "nests," whilst there is an absence of the cells of the epidermic type which stain with eosin. Lastly, there is a comparatively small amount of cell infiltration and disorganisation in the connective tissue of the corium. Dr. Thin does not think that any satisfactory proof has been published of, nor has he been able to trace, the origin of the neoplasm from the rete mucosum, hair sheaths, or sebaceous glands; but he has twice observed appearances in the sweat glands that strongly suggest they afford the first point of departure of the growth, though cell masses of new growth were not traced in direct continuity with abnormal sweat glands. The monograph will well repay perusal.

OUR LIBRARY TABLE.

Fairlie Clarke's Manual of the Practice of Surgery. Revised and partly rewritten by ANDREW CLARK, F.R.C.S., Senior Assistant Surgeon to, and Teacher of Practical and Operative Surgery at, the Middlesex Hospital; Examiner in Surgery to the Society of Apothecaries. Fourth Edition. Illustrated by 214 Engravings on Wood. London: Henry Renshaw. 1887.—The late Mr. Fairlie Clarke's manual was well known, and there is no need to discuss now the scope of the work. In preparing a new edition Mr. Andrew Clark had an almost impossible task before him, for we deem it little short of the impossible to present the subject of surgery worthily in the small compass of this manual. But what could be done has been done, and we have no doubt the book will find favour with those students who regard brevity as the essential feature in a text-book.

Disease and Sin: a new Text-book for Medical and Divinity Students. By A MEDICAL MUSER. London: Wyman and Sons. 1886.—This book deals with a great problem; we cannot say that it solves it. The author speaks with a strange mixture of orthodoxy and freedom. He assumes and avers that all disease comes of sin—largely national sin. He would evidently apply capital punishment freely to politicians who for party ends promote petty questions and neglect great national measures for the preservation of children from inherited disease and other avoidable causes of death. He prefers the account of the Creation given in Genesis to all the speculations of Darwin. His estimate of Darwin is not satisfactory, proceeding largely on very doubtful phrenological data, charging Darwin with a lack of modesty, which appears to us more in the accuser than the accused. His main proposition that disease comes of sin is an old one, and, but for the memorable rebuke it received from the Great Teacher concerning the man that was "born blind," might be allowed to pass as a good general proposition with many most perplexing exceptions. The book is a very readable one, and carries the reader over much ground in morals, medicine, and legislation. The author condemns and praises with great freedom. He assumes much. He sometimes theorises in a most unscientific way, and passes from one question to another very incoherently. Some of his "practical" suggestions are highly impracticable, such as the holding of a coroner's inquest into every case of consumption, and the establishment of local councils. "The most urgent reform at present needed is the formation of a council in every parish, in every street, and in every village or hamlet to guard the people against all physical and moral disease .....All the inhabitants ought to be paraded for inspection before the council,..... and in case any child is found to be imperfect in any respect, a special investigation should be held, and the parents or guardians censured, unless," &c. But, with all its faults and impracticabilities, there is much in the book that may be read with advantage by those who would like to improve the world—notably by parents, legislators, and medical men, to whom the author is very complimentary.

Letters from a Mourning City (Naples, autumn, 1884). By AXEL MUNTHE. Translated from the Swedish, by MAUDE VALÉRIE WHITE. Pp. 289. London: John Murray, 1887.—These letters are from the pen of a Swedish doctor practising in Paris, who was at Rome, enjoying a holiday, in 1884, when cholera broke out with so much virulence in Naples. He immediately started for that city, with which he appears to have been previously well acquainted, to render any aid in his power to the plague-stricken people. He recorded his observations with regard to the condition of the poor and the ravages of the disease in a series of letters which appeared in the Stockholm *Dagblad*, and these have been translated into English and reprinted in their original form. We think it is to be regretted that Dr. Munthe did not carry out his intention of revising and condensing them, as there is necessarily, from the circumstances under which they were written, a considerable amount of repetition. The description he gives of the conditions under which the poor exist in Naples is painful, and must remove any feeling of surprise at the intensity of the epidemic of 1884. "According to the official statistics no less than 128,804 of these people inhabit underground dwellings and cellars. ..... As many as 9846 individuals dwell in Fondaci," which the author describes as "the most ghastly human habitations on the face of the earth." A large number are lodged in "so-called locande, where lodgers are received for the night at two and three soldi a head," and which are frightfully overcrowded; while a fourth and very numerous class "have the starry heavens above them and the sewers beneath them. This is the class of Neapolitan poor who have no home at all." Dr. Munthe speaks in strong but not unmerited terms of the vainglorious laudation bestowed by the press upon the White Cross ambulance, to the exclusion of the medical staff of the town, who were doing their duty quite as bravely. "The perpetual struggle for notoriety, the continual mention in all the newspapers of its own heroic deeds, is so striking with regard to this association that it disturbs the impression of all the great and good work it has actually accomplished." We are afraid it is not the only association of the kind to which the remark is justly applicable. The book contains some touching episodes connected with the author's work among the poor, and will amply repay perusal. Although, as we have already said, the book might have been improved by judicious revision, we have no hesitation in recommending it to our readers.

Die Pathologie und Therapie der Gelenkengündungen. Von Professor Dr. MAX SCHULLER in Berlin. Wien and Leipzig: Urban und Schwarzenberg. 1887.—Dr. Max Schüller has published a short and condensed work on the pathology, etiology, and treatment of inflammation in joints. One of the opening chapters is devoted to a very good and simple classification of these joint inflammations; their causation and symptoms are then briefly dealt with, and finally the methods of treatment are described, not in detail as applied to each separate joint, but rather as to the principles involved. A very good bibliography is appended.

Griffith's Materia Medica and Pharmacy. Third Edition. Edited and partly written by ALFRED S. GUBB, L.R.C.P., M.R.C.S. London: Baillière, Tindall, and Cox. 1887.—Griffith's Materia Medica and Pharmacy has long been a favourite with students preparing for examination. The present edition, edited and partly rewritten by Mr. Gubb, is a great improvement on its predecessors. We have examined it with attention, and find that the information it contains is accurate, and that the whole work has been thoroughly revised. The arrangement is clear, and the facts are concisely stated, and are given in a form which admits of easy reference, whilst the errors are few and unimportant. We are inclined to think that it will be popular with students.

The Cookery Primer for School and Home Use. By AGNES C. MAITLAND. Pp. 158. London: John Hogg. 1887.—This volume contains 121 recipes for the preparation of "very economical dishes, at once wholesome, appetising, and sustaining." It is intended chiefly for the use of girls attending the cooking classes in elementary schools, and for the heads of families in the labour-earning classes. The instructions are clear and easily understood. In the introduction the "hints for hard times" are very good; among these we would specially note one which merits the consideration of cooks in all classes of society. "We English people will try and cook fast, and we make up a fire to cook our dinner quickly in an hour, or perhaps much less, and use more coal in doing that than would have served, if well banked up, to keep in a little fire for three hours, and have cooked the dinner better." We take exception to the recipe for making oatmeal porridge, and would advise the authoress, in the event of a second edition of the Primer being required, to consult some old "Scotch wife" on the subject. The book is one which might be advantageously distributed by those who are interested in the promotion of the comfort of the working classes.

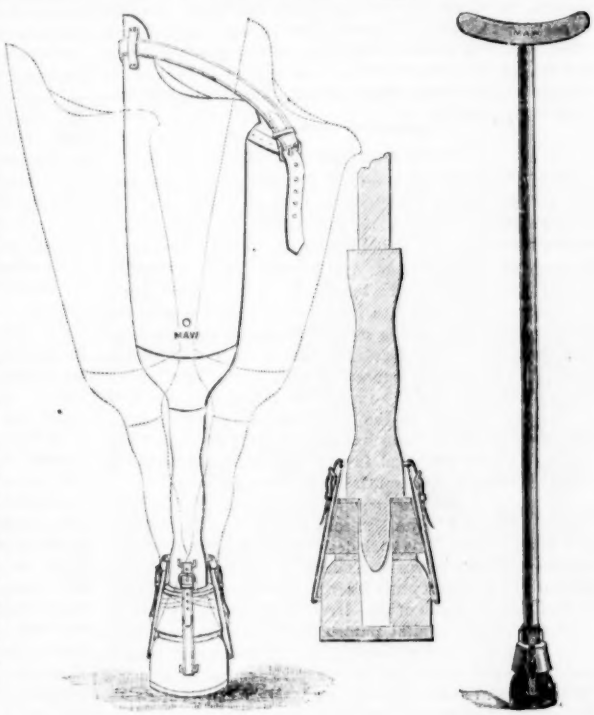
A Manual of Weights and Measures, with Rules and Tables. By OSCAR OLDBERG, Pharm.D., Professor of Pharmacy in the Illinois College of Pharmacy, &c. Second Edition, revised. Chicago: C. J. Johnson. 1887.—We are not surprised that this clear and useful little book has reached a second edition. The author has evidently a preference for the octonary or duodecimal system, but recognises the rapid increase of the decimal, and makes the best of it. His book is a carefully constructed and valuable little manual of metrology, and is well adapted for European as well as for American students. The sections on specific gravity, and the excellent tables with which the pages abound, will save much labour to those who use them.

Notes on the History of Freemasonry. By HENRY SUTHERLAND, M.D. London: John Bale and Sons.—These notes were, the author remarks in his preface, printed some years ago for distribution amongst private friends, and are now published in a larger form, with additions to them, which he believes will render the work more acceptable to his Masonic brethren. The notes do not profess to be exhaustive, but can be recommended as likely to prove interesting to those members of our profession who belong to the great Masonic body.

A NEW FORM OF ARTIFICIAL FOOT.

To the Editors of THE LANCET.

SIRS,—I should be obliged if you will allow me to draw attention to a new form of artificial foot which has been invented by a gentleman, who has been under my care, to suit the necessities of his own case. This foot or base is applicable to any form of artificial leg, and can be adapted to crutches or leg-rests. Its object is to furnish a wide basis of support which will maintain its plane and remain in contact with the ground by its whole surface in inclined positions of the leg. It adapts itself to slight irregularities of surface, and is of great advantage in walking over hilly or uneven ground. In walking it enables the wearer to carry his artificial leg parallel with the sound limb and to continue his stride well in front of the sound foot. It greatly diminishes the jarring and the noisy contact with the ground which is the common characteristic of all but the more expensive artificial legs; and for this reason it lessens the fatigue in walking and the friction at the end of the stump. The base or foot is more or less loose, and its movement is limited by three or more straps attached from it to the stem. Between the stem and the foot is inserted a thick block or ring of vulcanised rubber,



which is retained in place by the straps passing over it and by a peg which projects from the lower end of the stem through the central hole in the rubber block, and a short distance into a cavity in the upper part of the footpiece. The straps are left somewhat loose so as to allow of some movement between the stem and the foot. But any excessive movement is arrested by the tightening up of one or other of the straps. The accompanying illustrations will, I hope, supply the deficiencies of my description.

I am, Sirs, yours, obediently,

July, 1887. THOMAS SMITH.

P.S.—I am informed by Messrs. Maw and Son that the Willis' Leg and Willis' Crutches can be supplied at a comparatively small additional cost, and that the difference in price between these and the ordinary crutches and legs would vary from eight to ten shillings in the case of crutches, and twelve to eighteen shillings for legs.

THE LANCET.

LONDON: SATURDAY, JULY 23, 1887.

FEW classes of men stand in more urgent need of an annual holiday than the members of the medical profession. Their work is very constant, very exacting, always anxious, often in the highest degree laborious and harassing. Just in proportion to the scantiness of their daily leisure is the necessity for an adequate annual rest. Yet this necessity is but too commonly overlooked or trifled with, and not rarely the doctor works on year by year until an imminent failure of health compels the adoption of a practice which might at an earlier date have proved both a source of much pleasure and an efficient prophylactic against premature breakdown. How often do we inculcate upon our patients the folly of working on until the overwrought machine gives way at some point; how commonly does our practice belie our precepts. No doubt the difficulties which beset the medical man in arranging for a holiday are in many respects peculiarly embarrassing, and the busy practitioner is tempted to think that the rather chequered pleasures of a hastily snatched holiday are dearly bought at the cost of the unusual worry and vexation which sometimes ensue upon his return home. But to argue in this way is to follow a short-sighted philosophy. The man who wishes to make the most of his powers and to give himself the chance of long life must learn to rest, and to rest betimes, before body and brain have suffered irremediable damage. Work is but one side of life, rest and amusement form the other, and each is essential for the man who would be

"In se ipso totus, teres, atque rotundus."

If the annals of medical holidays were faithfully recorded, we suspect there would be some curious revelations. Everyone knows the story of the 'bus-man who always spent his holiday on the box of a fellow 'bus-driver, and it might easily be paralleled by instances of medical men who leave the routine of daily practice only to maintain the old associations by attending the clinique of some distinguished metropolitan or continental physician. We are far from entirely condemning this practice; yet it lacks one essential of a perfect holiday—viz., change of mental habit as well as of physical environment. The same objection might be urged against another favourite form of medical holiday, otherwise commendable—viz., attendance upon one of our periodical congresses and associations. Such a holiday has the great advantages of affording the means of interchange of ideas with our medical brethren, of stimulating professional zeal, and of forming or renewing valuable friendships; but, except incidentally, it does not afford much mental distraction or intellectual refreshment. We would urge our brethren in arranging for such congresses to moderate their professional zeal, to limit the output of scientific material, to encourage the social aspects of such gatherings, and to allow ample intervals for rest and physical recreation. By such means these periodical assemblies may serve many useful ends, and more nearly approximate to the ideal of a perfect holiday.

The medical holiday is characterised more commonly by activity than by rest. Medical men pursue for the most part an unresting life and their holiday usually partakes of this strenuous character. We know a provincial physician in extensive practice whose daily life is one of unremitting toil, and whose favourite practice it is to escape for a few days to London, and amuse himself by simply walking about the streets. It is a serious question, however, whether such a form of holiday is a practice to be imitated, or rather an evidence of abnormal mental restlessness to be combated and overcome. Yet we think that for the most part medical men do not take to a holiday of idle dawdling at a watering-place or spa, and that, if the general health be fairly sound, the holiday tour is rather to be recommended. It will be a great additional advantage if the tour consist, not of aimless posting from cathedral to picture-gallery, but of a visit to a locality possessing some features of medical interest. Auvergne, with its celebrated spas, Mont Dore, Royat, and La Bourboule; the Rhine, with Wiesbaden, Ems, and Homburg; the Pyrenees, with Luchon, Cauterets, and Bagnères de Bigorre; the Alps, with the consumptive sanatoria, Davos, Wiesen, St. Moritz, and Maloja—such are a few out of the many districts which might be indicated with favour. At such places the medical man will be sure of pleasant professional company, and may without conscious mental effort acquire a large amount of information which may afterwards be turned to practical account. Year by year patients of the wealthier classes more and more incline to foreign travel as a means of health preservation or health restoration; and the physician who can recommend sanatoria from personal knowledge, and not from mere vague hearsay statements, is sure to find his advice practically beneficial and proportionately esteemed. The observations and inquiries which the medical man may institute upon such a tour have the double advantage of being of real professional utility, while at the same time they are sufficiently removed from the ordinary groove of his daily home routine to constitute a means of genuine intellectual distraction. He must be prepared to receive much conflicting evidence, and to hear many statements not purely disinterested, as the battle of the health-resorts waxes daily more fierce, and derives an additional bitterness from the fact that it is a real struggle for existence. Yet amid the din of jarring claims the intelligent observer may always learn much that is worth knowing. To hotel-keepers, guides, cicerones, *et hoc genus omne*, he will, of course, turn a deaf ear; local medical men would be more than human if their prepossessions and interests did not occasionally warp their judgment; but in the large numbers of visitors at health resorts there is always to be found an intelligent jury daily sitting in judgment upon the merits of each locality, and quite ready to impart their conclusions to the inquiring stranger. Such evidence is no doubt individually of small worth, but its cumulative value may be considerable. The results of treatment are freely canvassed at health resorts, and cannot be effectually hid. Then, again, the medical tourist can easily satisfy himself regarding such vital points as water supply, drainage, hotel accommodation, objects and scenes of interest, facility of access, &c.

To the medical man who desires a really restful holiday,

nothing is better than a yachting cruise, if it can be obtained under conditions favourable to comfort. No doubt an indifferent ship, persistent bad weather, or obstinate sea-sickness may rob it of all satisfaction and utility, but apart from such unhappy accidents it is of great value. Very pleasant forms of this species of holiday may be secured by cruises round the British Islands, to the fjords of Norway, or to the shores of the Mediterranean. In this way shelter from exceptionally bad weather may be obtained at will, and the tedium of the sea may be varied by occasional excursions on land. As regards sea-sickness, we must own that it still remains an *opprobrium medicinæ*. There is no drug, in our opinion, which can be relied upon to exercise any certain influence in restraining its onset or shortening its course, and medicinal treatment seems usually hurtful rather than the reverse. Bromides, nitrite of amyl, chloral, chloroform, and a host of other remedies enjoy, or have enjoyed, a short-lived and precarious popularity, but few practical men feel any real reliance upon them. Probably the best line of treatment for anyone of known susceptibility to the malady is somewhat as follows: Let him before embarking eat a full meal largely composed of meats and bread; let him assume the recumbent position immediately on going on board, and use freely some sweet-smelling substance to combat the evil odours so common on shipboard; let him fix a flannel bandage round the abdomen, and draw it as tight as possible. If these measures fail to prevent the onset of the affection, some acid fruit should be sucked when nausea first threatens. All stimulants are hurtful at this stage. If there has been a severe bout of sickness, the patient should be carried on deck, placed upon a reclining-chair, and encouraged to eat some lean meat and bread. If there be severe suffering and great prostration, iced champagne is the best remedy.

We have only glanced at a few of the possible forms of medical holiday. Many medical men know their own tastes and needs best themselves, and require no suggestions or advice. Some of these find what they need in a fortnight upon the moors, or in the Engadine, or traversing the wilds of Norway in a carriole. After all, a holiday, like everything else, must be judged by its results. That holiday is best which yields the best fruits, and every general rule has a host of exceptions based on peculiarities of individual taste and temperament. If we return from a holiday physically refreshed, mentally recreated, and with a stored-up host of pleasant associations and agreeable memories on which we can hereafter draw at will, then our holiday has been a success. In proportion as these results are imperfectly attained, or entirely missed, must the doctor's holiday be pronounced a doubtful experiment, or even a complete failure.

THE growing conviction, which in not a few instances amounts to certainty, that infective disease is due to the presence in the organism of pathogenic bacteria, cannot fail to be accompanied by a feeling of impotence to deal with such disease at its root. We are not unmindful of the important measures of prophylaxis which are forcibly suggested by this aspect of the etiology of disease; and it would be easy to adduce evidence of the great stimulus which it has imparted to sanitation. But something more than this is demanded at the hands of those whose aim in life is to heal diseases. Until the term "preventable" comes to be something more than a mere phrase (and in the complex conditions of modern life it is safe to say that the time is far distant when it will be so) we are bound to seek for measures of treatment which shall be effectual in proportion as they attack the foundation of disease. We all know how far the pathologist has outstripped the therapeutist, and there are some who doubt whether the means will ever be available to cope successfully with the minute agencies that attack with too much success the human body, which has to resist their influence as best it may. Pushed to their ultimate limit, diseases that owe their origin to bacterial invasion are the expression of the internecine warfare between the cells of the organism and the foreign intruders. Is it conceivable, then, that by any remedial agents we can hope to destroy the bacterial host, and thus abort the disease, without detriment to the delicate structure of which the body is composed, or the risk of deranging the nutritional processes of its elements? And yet the attempt is made, and will continue to be made, thanks to the rooted belief in the efficacy of medicinal measures. On all sides we hear of bacillicidal methods, but the results are not commensurate with the faith that inspires them or the plausibility of the grounds on which their employment is based. We question whether any real advance will be made in this direction; and yet we by no means despair of a way being found out of the morass. That way lies, we think, in affording to the organism support sufficient to cope with the bacterial hordes—in other words, to strengthen the powers of vital resistance. This is no new doctrine, for it is in perfect harmony with the practice, which was owing so largely to GRAVES, now invariably followed in the treatment of fevers.

That, in addition to our present resources, there are other means whereby the vital resistance of the cells of the body can be stimulated is highly probable. One such method has been lately the subject of experiment, with results that may be worth recounting. It is the method which was introduced by FEHLEISEN in his demonstration that injections of the erysipelas streptococcus could cure lupus, and more widely known through CANTANI in his assertions that inhalations of the bacterium termo could cure phthisis. CANTANI's method has proved a failure, and if it alone were in question there would be no more to say on the subject. But, as Dr. PAWLOWSKY (VIRCHOW's *Archiv*, t. 108) points out, one great error of CANTANI's method was the obvious confusion of many species of bacteria under the head of bacterium termo, and we may add also the reliance solely upon the antagonism of the two organisms, the bacterium termo and the tubercular bacillus, as sufficient to cause the destruction of the latter. Dr. PAWLOWSKY himself demonstrates that it is in no such direct way that one micro-organism can be made to annul the effects of the other. EMMERICH has stated that when animals were inoculated with anthrax bacilli and with erysipelas cocci, either simultaneously or at a short interval, the result was either a prolongation of life beyond the term at which the anthrax bacillus would have caused death, or even a complete neutralisation of the anthrax virus with the recovery of the animal. Seeing that anthrax *per se* is invariably

fatal, these statements were sufficiently remarkable to warrant further investigation. Such an investigation was undertaken by Dr. PAWLOWSKY on Professor VIRCHOW's suggestion, and in addition to testing the counteracting influence of the streptococcus erysipelatis, he experimented in the same way with bacillus prodigiosus, staphylococcus aureus, and FRIEDLÄNDER'S diplococcus pneumoniæ. The experiments consisted mostly in the simultaneous injection of the cultures either beneath the skin or directly into the veins, but sometimes a short interval was allowed to elapse between the primary infection with anthrax and the injection of the neutralising culture. Without entering into the details of these experiments, it may be said that PAWLOWSKY concludes from them in favour of the possibility of curing anthrax by inoculation with other bacterial forms. He found that local anthrax could be cured by subcutaneous injection of micro-organisms at the spot or around it; and that the diplococcus pneumoniæ was the most powerful antagonist to the anthrax bacilli. The next in order was the staphylococcus aureus, which operates in destroying the bacilli by the severe suppuration it excites; but as a remedial agent it is out of the question on account of its virulence. Even the injection of bacillus prodigiosus—a non-pathogenic organism—sufficed in some instances to annul the effect of the anthrax virus, especially if two injections of the former were made and local suppuration excited. Least in efficacy appears to have been the streptococcus erysipelatis—the organism which EMMERICH had made use of in his experiments. As regards the cure of general anthrax, the results of intravenous injection of the above micro-organisms were not so satisfactory. The most favourable results were those obtained by means of the diplococcus pneumoniæ, when this was injected simultaneously with the anthrax bacillus. But even when the injection of the diplococcus followed after an interval upon that of the bacillus, the animal's life was prolonged beyond the term usual in cases of pure anthrax-inoculation. Intravenous injection of the staphylococcus aureus was of no avail; the animals so treated dying either of anthrax or pyæmia, according as one or other of the micro-organisms prevailed. Lastly, similar injections of the erysipelas coccus or of the bacillus prodigiosus failed to prevent the animals dying from anthrax, although apparently prolonging life.

In spite of these somewhat variable results, there yet seems sufficient evidence for the belief that anthrax can be successfully treated by such a method; yet the reason of its success was found to lie less in the directly antagonistic action of one micro-organism upon the other, than in the effect produced upon the cells of the animal body by the introduction of a new micro-organism. This, at any rate, seems to follow from the microscopical examination of the organs of animals so treated. For example, Dr. PAWLOWSKY found in the body of a rabbit which died four days after the intravenous injection of anthrax bacilli, and then of bacillus prodigiosus, bacilli more or less disintegrated within the substance of the large splenic corpuscles, as well as within the cells of the lungs, liver, and kidneys. Indeed, speaking generally, in animals dying as late as four days after inoculation, there were fewer bacilli found outside the cells than within them; and whilst the former bacilli retained their natural characters, the latter were invariably more or less disintegrated. The longer the animal survived the more marked did this state of things arise, so that cells became crowded with bacilli in various stages of degeneration. These appearances were considered as highly confirmatory of METSCHNIKOFF'S doctrine of phagocytes, which in the spleen are represented by "macrophagi," and in other organs by migrated leucocytes. The explanation, then, of the antidotal effect of these bacterial injections would seem to lie in the phagocytes being stimulated to increased resistance, as well as reinforced in number, so that they were the better able to resist the intrusion of anthrax bacilli, and even to overcome them. Such is the latest conclusion arrived at in bacterio-therapy; it is by no means the last, for indeed the subject has hardly yet been studied. Its further development will be watched with interest, although the time for any practical application is probably far distant.

WE are now again approaching the period for those autumnal scientific conferences at which subjects involving important medical considerations are often fully discussed, and we are forcibly reminded of the singular and habitual absence of delegates officially appointed by the British Government when compared with those who represent other European and American States. And yet at some of these conferences the subjects discussed have more importance for this country than for any other. Take, for example, the Sixth International Congress on Hygiene (which is to assemble in September next at Vienna), and the French congress at Havre next month, to which representatives of all naval and mercantile marine interests are invited. At each of these gatherings questions are to be discussed relating to the preparation of international codes for dealing with epidemics, and leaders in the antiquated system of quarantine and allied measures are sent by their respective Governments to secure the acceptance by the congresses of certain definite resolutions laying it down that quarantine is the proper method for preventing the spread of cholera. Dr. PROUST seems to have a roving commission from the French Government in this respect, and he will appear at both the conferences named, having in charge the resolutions which were brought forward in Rome by the French delegation, and which are based upon the assumption that all that Europe needs to save her from cholera is to hold in check for a period of five days all vessels which are suspected or infected. At the last international conference on hygiene the same views were trotted out, no one was delegated from this country to show the fallacies underlying them, and hence conclusions inimical to the true interests of public health were passed on one-sided evidence alone. We do not know what steps Her Majesty's Government are taking to have British views on this important medical question properly set forth at Vienna and at Havre; but we feel confident that the policy of apparent indifference to what Europe at present thinks is not the one best calculated to secure British interests. At Havre, especially, we hope some properly authorised medical delegate will be sent out by the Government, so that British representatives of the shipping

interests will not be there unsupported in any effort they may find it necessary to make to withstand conclusions already cut and dried by the French delegates, and which are to be submitted to the gathering as having already been accepted by other scientific and medical congresses. The attempt which was made in Rome in 1885 to impose quarantine in an international form upon Europe altogether broke down because of the attitude of the medical delegates from this country, and the conference having adjourned has never since met to give its sanction to the retrograde views which were set forth. But in the absence of delegates capable of showing the hollowness of mere quarantine restrictions, conference after conference is passing resolutions advocating these restrictions, and the representatives of British shipping stand a good chance, unless they see that the French medical delegates are fairly met by British delegates having knowledge of the medical aspects of this question, to be outvoted in this important subject; and then it will go forth that even a conference dealing with the maintenance of international health from the naval and marine point of view has also advocated the quarantine system. We trust that all who are concerned in opposing unnecessary and vexatious restrictions on commerce, and in frustrating useless attempts to control disease in connexion with shipping, will demand that this country shall be properly represented when these questions are discussed by professedly international gatherings.

THE teaching of Anatomy is a matter of such great importance, that we note with much satisfaction the remarks made on the subject at the commencement of the first business meeting of the Anatomical Society of Great Britain and Ireland held on the 7th of this month. *A propos* of his paper on the Brachialis Anticus Muscle, Professor MACALISTER of Cambridge remarked on the necessity of restricting the teaching of anatomy as much as possible to the points of obviously real value—the points, that is, which have some practical bearing or some morphological or developmental interest. These, he said, should be thrown into relief, and the student's attention fixed upon them, instead of being scattered promiscuously over the whole field, and no clear and defined marks left impressed upon his memory. Professor HUMPHRY, who was in the chair, welcomed these remarks with great pleasure, as forming the best possible introduction to the work of the Society, and hoped they would be duly borne in mind not only by teachers but also by examiners. They were peculiarly appropriate, he felt, at the present time, when the range of subjects of medical education and examination had become so great that it was scarcely possible for the average student to master them in the period that can reasonably be allotted to the preparation for the medical profession. The ill effect shows itself especially in the amount of detail, great in each subject and far too great in the aggregate, which leads to overloading the student beyond his carrying powers, and cramming him quite out of proportion to his digestive capacity, with the necessary result that he is wearied with his work, loses, or perhaps never acquires, interest in it, and forgets nearly as fast as he learns. Nothing, as he remarked, so much as this tends to make our "Jacks" "dull boys," and to swell the rejection lists to the serious dimensions they have now attained. This applies, Professor HUMPHRY said not to medical study alone, but along the whole line of education, general as well as special, and has done more than any other thing to repress thoughtfulness and pleasure in study. That which interests is remembered; and it is the thoughts associated with facts which gives them their interest. Each fact should be regarded as a peg to hang a thought on, and should be regarded as rather a useless article of furniture unless some thought is hung upon it. What is needed is not to burden our students with a mass of facts, but to associate important facts with ideas in such a manner as will impart interest to them, as will make the student perceive the value of them as part of his stock of knowledge, and will enable him to hold them firmly. We entirely concur in these remarks, and are glad that the initiation of the Anatomical Society has had the effect of evoking them. Notwithstanding the greatly increased opportunities for the study of anatomy which have recently been gained, we very much doubt whether the study itself is really carried on better than it used to be. Difficulty, we know, often gives impulse to effort, and scarcity of material enhances the value of it and the care with which it is utilised; but the supply is scarcely yet sufficient to produce any such ill effect. It may be that the students, perhaps from superfluity of assistance, of guidance, and of training, become too much dependent upon others and too little upon themselves. Hence they take less trouble to work out things for themselves, and therefore have less deep and enduring impressions and firm grasp, though they may receive a larger amount of impressions which are superficial and proportionately evanescent; or it may be, as Prof. MACALISTER seems to imply, that there is too much anatomy taught, and too little well taught. Whatever the cause may be, the anatomical status of candidates at the final examinations, when practical knowledge is chiefly required, is such as to demand the serious attention of teachers. The rejections at the primary examinations are startling enough; but of those who have passed this ordeal, far too many fail to retain a sufficient amount of valuable knowledge to meet the final test. We may hope that the new inspectors of examinations appointed by the Medical Council will direct their attention to this point, and be able to furnish some wise suggestions to teachers and examiners, as well as to students, of anatomy.

THE *Echo* of July 15th reports an inquest held by Mr. WYNNE E. BAXTER, touching the death of ELIZABETH RAINE, aged eighty-seven, a single woman, in the St. George's Workhouse, Old Gravel-lane, Wapping, which seems to us worthy of some attention. The deceased went into the workhouse on the 4th inst., in her usual health, according to the evidence of the principal witness, JAMES JOSEPH RAINE, her nephew. On the 10th inst. (Sunday) his wife and daughter called to see the deceased and she was then very ill and unconscious. On the Monday the nephew called. He was not allowed to see the deceased, but was told she would be all right in a day or two. His wife had told him his aunt was bruised and strapped in bed. On inquiring the cause of this he was told by the doctor it was to keep her in bed. On the Tuesday he received a card saying she was very ill

and wished to see him. He went and found her unconscious. He was anxious to call in an independent medical opinion, but this, according to the ordinary rules of pauper attendance, was denied. On the 13th he called and found that death had occurred, and was told that a card had been sent to him. One of the inmates, MARY LEARY, deposed to being awakened on the night of Tuesday, the 5th inst., by a noise, and then to seeing the deceased lying on the floor near the fireplace, with her arms across the fender. She tried to help the deceased up, but could not do so, and called in the nurse, who got the patient into bed, and left another woman, an inmate, to watch her for the rest of the night. No explanations from the deceased were obtained. Other evidence continued the history of the case, its removal to the infirmary, where the deceased became delirious and restive, and was gently strapped in bed. Mr. ARTHUR MICKLE, the assistant resident medical officer, stated that the deceased had died from exhaustion, the result of acute senile mania. He did not think that the fall had anything to do with the attack, but that possibly the change from the home to the workhouse might. The nephew asked the coroner if he should not have been allowed to call in an independent medical man. The coroner said he could not allow that question to be argued, and that a patient coming into a workhouse must be treated by the doctor provided by the ratepayers.

Such are the simple facts of this case, which, by the courtesy of Mr. MICKLE, we are able to verify. The evidence seems to have been all given in a straightforward and candid manner, and we do not see that much blame attaches to any individual. But we cannot say that the illustration of the system which the facts afford satisfies us. It is not satisfactory to find that after a patient of eighty-seven has been found near the fireplace, and on the floor and helpless, in the night, she is left to be looked after only by a fellow-pauper almost as helpless as herself. Not only so, but after a nurse had been called and had got the patient into bed, there is no record of the medical officer being summoned.

The case raises, too, an important question to which we often revert—the system of medical attendance in workhouses, and, for that matter, of paupers outside. Here is a patient at the advanced age of eighty-seven under the necessity of becoming the inmate of a workhouse. Is it to be settled that to all the other painful incidents of such a position, and whatever the acuteness and severity of her disease, she is to be denied the advantage of a second medical opinion and the presence of her friends? This is to convert a workhouse into a prison. The coroner, naturally enough, could not allow the time of the jury to be taken up in discussing this question. But it is eminently one for discussion. Our workhouses, especially in London, are becoming more and more the residence of hundreds of poor people, with all the accumulating diseases of age and poverty upon them. Mr. MICKLE not unnaturally assumed that the very removal to the workhouse was a factor in the production of acute mania that was fatal in nine days. And it requires little of either experience or imagination to create the belief that there is a mass of painful and complicated disease in our workhouses, adding another pang to the bitterness of pauperism, which ought at any rate to be the subject of consideration. We will not believe that the ratepayers would refuse to consider some means whereby such sufferers might have the benefit of more than one opinion, either at their cost or that of friends. This is no matter of complaint against medical officers of workhouses, whom we know to be most capable men, and incapable of any unkindness. But do we not all know, in the more hopeless ages and circumstances of life, and when the limitations of art become so painfully apparent, how pleasant it is to see more than one representative of that profession which more than any other is looked to to mitigate suffering and to stimulate hope? We shall not cease to maintain that the thousands who inhabit our workhouses, and their friends, are entitled to know that in the mental and physical disease which afflicts them every resource of medicine and surgery is available for their relief.

Annotations.

"Ne quid nimis."

DEGREES FOR LONDON STUDENTS.

A PETITION has been presented to Her Majesty in Council by University College, London, and King's College, London, praying for the granting of a charter of incorporation "to a body of persons to be appointed as is described in the petition to be a University in and for the London district, having power to grant degrees in the faculties of Arts, Science, and Medicine, with power to add other faculties." The petition has been referred to a committee of the Privy Council, and will be considered on Sept. 1st. This petition has also been sent to the authorities of the London medical schools, who, it is proposed, shall join the medical departments of the two Colleges in forming the Medical Faculty of the proposed University, the faculties of Arts and Science being reserved for King's and University Colleges only. It has also been forwarded to the Royal Colleges of Physicians and Surgeons, with a hope that they may even yet combine in one application. As, however, the delegates of the two Royal Colleges have appointed a sub-committee to draw up a further statement of the claims upon which they urge the granting of a degree in medicine only, it seems highly improbable that any joint action will be taken. Obviously this statement and the draft charter of the joint Royal Colleges should be presented to Her Majesty in Council as soon as possible, for if the petition and charter from King's and University Colleges are to be considered on September 1st, whilst the others are left over to a further date, and the vacation intervenes, a speedy solution of the question, which in the interests of students and the profession is so desirable, cannot be arrived at. It is surely possible that the academical and professional sides of the question can still be fused and a teaching university for London established. Almost every reason that was put forward for the formation of the Victoria University applies to the necessity for a local teaching university in the metropolis.

ARMY ESTIMATES SELECT COMMITTEE.

AT the last two meetings of the Select Committee on the Army and Navy Estimates, Sir Thomas Crawford, the Director-General of the Army Medical Service, was under examination. He considered that the work of the department was sufficient to occupy its staff, and that it was at times overworked. There was no department in the public service in which the mortality was so great. The present rate of pay to medical officers was not too large, as lower rates would not attract a good class of men. It had been considered necessary to increase their pay, as it was found

impossible to obtain a sufficient number of candidates to fill vacancies on the terms offered. Under the new system and the present rates of pay no difficulty had been experienced in getting a fair supply of good candidates. He was of opinion that it was a wise measure to allow medical officers to retire, if they wished, at forty-five (it would be more correct to say after twenty years' service), with a pension of £1 per diem. During his time a hundred officers had so retired, but of these, twenty were completely worn out. He believed the proportion of medical officers was about 3 to every 1000 men, and did not consider this proportion excessive, as many duties were imposed upon them which required them to be in constant attendance upon the troops. He was of opinion that all medical officers actually in the field should be military officers, but a considerable proportion of the others should be civilians. He thought the school at Netley was of great value. He pointed out that the health of the British army had improved most enormously during a period of years, and that improvement was continuous and still going on. In India there had been a steady progress in the direction of improving the general condition of the soldier, and this had served to bring about a reduction in the mortality. Such appears to be the general outline of the evidence; when it is published in detail there are several of the questions raised to which we may find it necessary to direct special attention.

MYOPIA IN GERMAN SCHOOLS.

THAT the educational system of our Teutonic kinsmen is responsible for the impaired vision so widely, nay, increasingly prevalent in the Fatherland has till the other day been accepted as a demonstrated fact—accepted, moreover, by the majority of German school legislators as calling for immediate and drastic reform. Dr. J. Stilling, however, the distinguished professor of ophthalmic medicine in the University of Strasburg, joins issue with these authorities, and in a vigorously argued and well-written treatise ("Untersuchungen über die Entstehung der Kurzsichtigkeit"—"Researches on the Origin of Short-sightedness") he seeks to prove—1st, that myopia is not a peculiarly German ailment, any more than it is a specific concomitant of modern high-class culture; 2nd, that myopia is in general no misfortune at all, but in the vast majority of cases a quite harmless deformation of the eye—a deformation not inherited as such, but conditioned by certain anatomical relations of skull development; 3rd and finally, that the school system of his country is not to be lightly made responsible for evils which have not yet been scientifically proved against it. On the other hand, he thinks, the panic into which the indictment has thrown the community, general and educational, the consequent prejudice to school work, and the needless burdening of the State and the taxpayer for the carrying out of crude experiments, constitute a far graver evil than the disadvantages due to myopia itself. Professor Stilling makes an important contribution to the history of medicine when, in support of his first plea, he goes back to Aristotle, and from that physiologist downwards proceeds to show that myopia has in all times been known to cultivated nations as a harmless defect, while in the Middle Ages knights-errant who happened to be short-sighted had helmets specially adapted to assist their vision. Was their defect, he ironically inquired, due to any school system or intellectual over-pressure? Mercuriale, the eminent Italian physician of the sixteenth century, remarked that while Italy had so many short-sighted people the Germans had few or none. "Cur in Italia," he asks, "tot videamus quorum oculi visusque sunt adeo offensi? In Flandria, in Bohemia, in Germania parcos videbitis qui ob visus offensionis cogantur ocularia gerere"; and then he proceeds to account for the phenomenon by the greater devotion to Venus and Bacchus on the part of Italy—an argument which Professor Stilling will not admit. A modern school-reformer in Germany would say that Italy at that time was what Germany has long been—the land of the studious, of those addicted to eye-exhausting pursuits. Professor Stilling, however, is as little satisfied with this explanation as with Mercuriale's, and proceeds to point out that there are two distinct kinds of myopia—the myopia of the diseased eye, with which work of any kind, school-work included, has nothing to do, and the myopia dependent on the formation of the eye, which is itself conditioned by the structure of the eye-cavity, or, in other words, by the cranial development. Donders himself, who opened the campaign against short-sightedness as a product of the school system, maintained that every myopic eye is an eye diseased *(jedes myopische Auge ein Krankes Auge sei)*, has yet had to avow that if he had the power to banish myoia pout of the world he would not exercise it. Near-work *(Nahearbeit)* is, in fact, better performed by this type of eye than by the normal one; but near-work of a far severer kind than any demanded in schools is daily performed by watchmakers, who, as a class, Professor Stilling maintains, are not short-sighted. The Strasburg professor's treatise has yet to run the gauntlet of many rival ophthalmologists, particularly among his compatriots, some of whom have announced their forthcoming criticisms; but his views are well worthy of consideration, not only from the acknowledged eminence of their author, but of the peculiarly pressing nature of the controversy which has evoked them.

THE STATE OF THE THAMES.

AT a recent meeting of the Common Council the present disgraceful and dangerous state of the Thames was once more discussed. Mr. E. G. Wood spoke of a large portion of the river as a huge sewer, and Deputy Saunders, who represents the Corporation on the Metropolitan Board of Works, admitted the evil, and even went so far as to confess his fear that it would never be effectually remedied "until the main drainage outfalls had been removed to a far greater distance down the river." The Board is spending enormous sums for chemicals, and is preparing for a still more enormous expense for permanent works of precipitation at the present outfall. But, as we have often pointed out, no true solution of the difficulty is as yet contemplated. The pertinacity of the Board in resisting the mass of evidence before it, and clinging to the present outfalls, is amazing. All the money that is spent on them will be thrown away, for common sense must inevitably prevail in the end, and a simple and practical remedy has repeatedly been suggested. There is, indeed, but one real remedy that is possible. The strongly expressed advice of the Metropolitan Sewage Discharge Commissioners must, sooner or later, be adopted. The sewage must go down to Canvey Island, or some other suitable spot in Sea Reach, and there be defecated, filtered through the land, and only thrown into the river as a clear and innocuous effluent.

TREATMENT OF DROPSY BY PERMANENT BATHS.

IN the course of a paper *(Berl. Klin. Woch.*, 1887, No. 29), upon the use of permanent baths (at a temperature of about 95° F.), L. Riess, after giving instances of their value in cases of spinal disease and injury, adduces some rather remarkable facts of their efficacy in the treatment of dropsy, whether cardiac or renal. These cases are often complicated with bedsores, erysipelas, and gangrene, for which such treatment would be suitable, but he says that he long withheld it because of the idea that cardiac or pulmonary disease would be a contra-indication to its employment. However, in 1879, in a case of extreme cardiac dropsy (mitral and

aortic disease) with considerable erysipelas and cutaneous gangrene of the legs, he determined to try the effect of the permanent bath as a last resort, not without some misgiving lest the immersion should increase the dyspnœa and dropsy. The result proved quite the reverse, for a rapid improvement took place, and when, after having been in the bath a fortnight, the patient returned to bed, the dropsy and other severe symptoms had disappeared. Since then Riess has adopted the procedure in a large number of dropsical cases, and invariably with benefit, the dropsy in most cases (whether renal or cardiac) diminishing within the first forty-eight hours in a striking degree. The quantity of urine is not increased *pari passu*, so that it is suggested that the effect of the permanent bath is to increase the functional activity of the skin, which is contrary to the prevalent notion. The good results obtained in cases of chronic rheumatism so treated are also mentioned, and it is held that the application of the method is practically very simple, it being necessary of course to allow the patient to lie comfortably suspended in a hammock, and to place a thick woollen covering over the bath to retain heat as much as possible. At first it is well to allow the patient to leave the bath at night, but as he gets more used to it he may spend days and nights in it with much comfort both to himself and his attendants.

BONE-SETTERS.

THE untimely death of Mr. Hutton by accidental poisoning has given to a considerable portion of the public press an opportunity for lauding the practice of bone-setters in general and that of Mr. Hutton in particular. To judge from the panegyrics of several leading papers, it would seem that they were bent on the apotheosis of quacks and the canonising of "irregular practitioners." The adage "De mortuis nil nisi bonum" is on most grounds and occasions an admirable one; but, be it remembered, there is a duty owing to the living as well as to the dead, and we should be shrinking from what we consider a paramount responsibility were we to leave unnoticed certain articles recently made public, as we suppose, for the guidance of future sufferers from accidental injuries. Some years ago Sir James Paget gave to the medical profession a record of his experience of "cases that bone-setters cure." Therein may be found a detailed account of sprains, dislocations, and muscular inhibition of movement that may be and often are benefited or removed by the free and ready method of handling habitually practised by bone-setters. The pain and disability caused by a displaced tendon or a locked joint, and the stiffness due to adhesion bands, are appropriately treated by forced movements. At the same time the force requires to be tempered with discretion suggested by the patient's age, constitutional state, and other circumstances, which can only be properly appreciated by one who has received a careful training in surgery and the allied branches of the medical art. By a happy chance rude and rough exertion on the part of the manipulator may suffice to restore lost power and mobility to a crippled limb, and no doubt many such cases occur to the bone-setter. These are the cases that are signalised as triumphs, and find their way into the chronicles of wondrous cures. But what of the failures and disasters that make up the complement of "irregular practice"? We may be sure that their authors do not publish them, and that the victim-patients are only too glad to conceal their chagrin and the consequences of their misplaced confidence. The ancient Greek warriors hung up their shields on return from their wars as votive offerings to the gods for safe deliverance from the perils of battle. A contemporary philosopher gave a wise reproof when he exclaimed, "But where are the shields of those who did not return?" The same reasoning in different terms might aptly be applied to the subject under review: Here are the successes, but where are the martyrs to operative audacity? There are few medical institutions that could not furnish a ghastly array of cases where life has been sacrificed or the utility of a limb destroyed by the ruthless treatment of the bone-setter. One example may suffice for illustration. A bone-setter was applied to for the diagnosis and cure of "a bad shoulder." He discovered the inevitable "dislocation" and wrenched the joint, perchance with the strength of three ordinary men. The patient had a malignant tumour of the upper end of the humerus. Unfortunately the ignorant, but trusting, sufferer expects to be told he has a sprain, or a sinew out, or the like. Unhappily, too, for the cause of science and truth, there is too firm a ground for his expectancy. He may be pretty sure that he will be satisfied on this head; and so it is that a thousand and one cases of slight moment are falsely or wrongly described; and when in the course of time nature, in spite of the violence she has received, effects a cure, the result is spoken of as phenomenal. In one instance a renowned provincial bone-setter told a man that his finger was dislocated, whereas to our knowledge it was a case simply of a tendon severed by a knife. The finger was forcibly flexed and extended, a liniment ordered, and the wound healed, but to this day the finger is straight, stiff, and useless, simply because no attention was paid to position. We suppose it is the charm pertaining to mystery that makes the public refuse "to incline to the traditions of experience" or "to the methods of learning." It is difficult to convince a man of the truth against his inclination; and "in spite of the wisdom of sages, men's actions are not governed by their convictions."

A CHOLERA WARNING.

THE Registrar-General's return for the week ending July 16th supplies information which, together with the announcement of maintained cholera in Italy, should be taken as a warning to this country. The deaths which are included in the group of diarrhœa, dysentery, and so-called cholera amounted in London to 526, being 86 above the corrected average. Indeed, as regards diarrhœa, the leap in the last six weeks has been from 9 to 312, including 265 deaths of infants under one year of age. Although the causes of infantile diarrhœa are not yet fully understood, yet one thing at least is known, and that is, that there is a distinct tendency to diarrhœa fatality in districts which are liable to the spread of imported cholera. Under these circumstances, all sanitary authorities should endeavour energetically to cope with every condition tending to exceptional diarrhœa prevalence.

A CAUSE OF TYPHOID FEVER.

DISCUSSING the distribution of typhoid fever in Oldham, Dr. Niven, the medical officer of health, refers to the well-known tendency of this disease to prevail in the colder rather than in the warmer months. In the case of his district he interprets it by explaining that there is a general influence in operation which is for the most part combined with influences acting specially in the winter months. That general influence he describes as either the admission of sewer air into houses by means of defective drain arrangements, or the action of polluted subsoil water, or the two combined. Open doors and windows in summer reduce to a minimum the evils thus resulting. But in the winter, injurious emanations are drawn into dwellings by the aid of internal warmth and of fires, and the foul air is penned in by reason of closed doors and windows. This explanation has often been referred to by various officers of health, and the circumstances described must be regarded as having

an important bearing both upon typhoid fever and other conditions of health. Ventilation of houses is as much needed in winter as in summer, and we should like to see a bye-law which requires every house to be built on a site covered with a layer of good cement concrete everywhere adopted and carried out. By such means alone can the suction into dwellings of subsoil air, which is always open to suspicion, be prevented.

SUMMER DRINKS.

A CONTINUANCE of fine weather and of warm sunshine, in spite of the rain upon St. Swithin's Day and occasionally since, implies a continuance of thirst as a necessary consequence of the free perspiration which is likely to attend all muscular movement. In England tropical heat is so rare that we cannot afford to dislocate all business engagements during the middle of the day, and we suffer accordingly; our ceaseless activity is followed by copious perspiration; this in turn by rapid evaporation and its ordinary risks; then, owing to the enormous drain of water from the system by the skin, the various secretions, more particularly those of the mucous and salivary glands, are diminished, and dryness of the mouth and thirst result. There is naturally great temptation to slake thirst whenever practicable, and to re-establish the balance of fluid in circulation. How this can best be effected becomes therefore a question of great importance at the present season. Many persons doubtless increase their discomfort by injudiciously drinking quantities of cold water, which serve to stimulate the sweat glands and so to increase the amount of loss by perspiration. While the "cold-water cure" is to be deprecated, it should not be forgotten that it is equally, if not more foolish to indulge freely in alcoholic stimulants. For the time they certainly allay thirst by stimulating the salivary glands, but after absorption they promote relaxation of the arterioles and increase the rapidity of the heart's action, and are hence followed by a speedy "Nemesis." The cooling influence of acids should be remembered in times of high temperature. The acid employed will necessarily be largely a matter of taste. Most persons would shrink from the use of dilute solutions of citric or tartaric acid, and yet many find relief from a beverage composed of diluted and unsweetened lemon juice. Should cider be found to agree with the digestion, a very pleasant summer drink may be compounded of equal parts of cider and of any pure form of effervescing water, the Hereford or rough cider being, as a rule, more palatable than the sweetened forms. Cold tea has many adherents, but it is worth noting that it should be poured out while still hot, and not allowed to stand to cool in contact with the leaves, since under these conditions, the astringent properties become more completely dissolved, and the tea becomes less palatable and more likely to disorder digestion. Tea has, however, its disadvantages, the chief undoubtedly being the amount of wakefulness produced by it when taken late at night. With regard to iced drinks, it should be borne in mind that the refreshing sense of coolness resulting from their employment in bulk is speedily followed by reaction. This is less felt when a cardiac tonic is employed in this form—as, for example, the iced coffee so commonly provided at afternoon parties. "American drinks," also, are to be employed only in great moderation and with caution, being liable to induce catarrh of the stomach during the period of reaction following the primary chill. Of the so-called "temperance drinks" and of the more common lemonade and ginger beer there is little to be said, provided that the purity of their source can be ensured; it is, indeed, on this acount that we would urge the employment of the more troublesome but infinitely safer home-made lemonade, prepared with boiling water, and rendered more agreeable by the subsequent addition of any pure effervescing water. Sugar should not be added in any quantity, as it evolves so much heat during oxidation. It is curious to note that the French, who in hot weather so carefully and wisely avoid alcohol, overlook this influence of sugar, and indulge freely in summer drinks of syrups and *eau sucrée*.

ACUTE PROGRESSIVE POLYMYOSITIS.

IN the current issue of the *Fortschritte der Medicin* (1887, No. 14), Professor Unverricht summarises the facts observed by himself and Drs. Hepp and Wagner in three separate cases of the rare affection, primary acute myositis. His own case was recorded in 1881, and he has not met with another since. The case was that of a bricklayer, twenty-four years of age, who was attacked with rheumatoid pains in the thighs and joints. An urticarial eruption on the face was followed by inflammatory swelling of the muscles and connective tissue of the face and limbs. The muscles were extremely tender, so that the patient could barely move. The trunk muscles were affected later, and then the laryngeal and pharyngeal muscles, so that deglutition became almost, and finally quite, impossible. The thoracic muscles were lastly attacked, pneumonia developed, and the patient died from asphyxia after an illness of barely six weeks' duration. The urine had been free from albumen and sugar; there was profuse sweating, and moderate fever. Trichinosis was suspected during life; an exploratory examination, however, of a portion of the deltoid revealed myositis, but no trichinæ. The post-mortem examination confirmed this, nearly all the voluntary muscles being attacked, the extensors of the limbs being most affected. The muscle had a speckled appearance, pale and grey streaks mingled with dark-red hæmorrhagic spots in its substance, which was brittle and œdematous The subcutaneous tissue was also œdematous. The tongue, diaphragm, ocular muscles, and heart were quite intact. The spleen was markedly swollen. No trichinæ were found in a large number of specimens of the muscles, which presented all forms and stages of degeneration, breaking up into fibrils and discs, with cloudy swelling and waxy degeneration, and in places fatty degeneration. The interstitial tissue was infiltrated with round cells, and in places the engorged vessels were surrounded by hæmorrhage. The spinal cord and peripheral nerves were free from changes. Dr. Hepp's case, published this year, was that of a woman, of previous good health, who had for some time felt unwell, when she was attacked with a rash and sore throat. A week later appeared rheumatic pains in the back, and then in the limbs, succeeded by dense œdema. Transitory œdema of the face occurred, leaving behind some swelling of the eyelids. The muscles became tonically contracted and rigid, and there occurred profuse sweating, scanty secretion of urine, insomnia, and increasing weakness. The contraction was so extreme that movements were very limited, and then succeeded cramp and paresis of the muscles of the neck, limbs, and palate. But mobility was retained in the ocular and facial muscles, as well as of the tongue, and the diaphragm, heart, and bladder remained unaffected. The patient died after eleven weeks' illness from intercurrent broncho-pneumonia. In this case also there were splenic swelling and fever. The muscles were pale, like those of the rabbit or of fish, rigid, friable, and infiltrated with serum. Hyaline degeneration of the fibres was found in various stages, but there was barely any interstitial inflammation. In this case the inflammation was almost wholly parenchymatous. Dr. Wagner's case was that of a female cook, thirty-four years of age, the subject of chronic phthisis, who was attacked with pains in the back and thighs, followed by stiffness and tenderness in the neck, shoulders, wrists, and legs. There was slight œdema of the hands, forearms,

and legs, which increased to a great degree. An erysipelatous rash appeared on the arms, but passed off together with some of the swelling, so that the arms improved in their mobility. There was considerable fever, and attacks of dyspnœa attributable to involvement of the chest muscles. Death occurred about two months from the onset of pain. Myositic changes were found in nearly all the voluntary muscles. The diaphragm, tongue, ocular muscles, and heart were again unaffected; and no lesions were found in the nervous system. Professor Unverricht points out the close resemblance which these cases bear to one another: in the presence of fever, splenic swelling and œdema, the marked inflammatory nature of the muscular lesion, the preferential involvement of the limb muscles, the progressive course of the disease, which finally involves the muscles of deglutition and respiration, the immunity of the muscles of the eye, heart, tongue, and diaphragm, the occurrence in each case of an urticarial or erysipelatous rash, and finally the mode of death. These characters justify, he thinks, the term "polymyositis acuta progressiva," as descriptive of a distinct disease.

ADVANCE AUSTRALIA.

MANY things have concurred recently to direct the attention of Englishmen at home to the flourishing colony which has already made the Anglo-Saxon race pre-eminent in the southern hemisphere. That attention cannot fail to be arrested by Victoria, and the whole continent may well be content to have its progress measured by the record which Victoria shows. According to the very interesting report which has just been sent home by Sir H. B. Loch, this has been the first among the Australasian colonies to attain to the number of one million of inhabitants. This point was reached in March of last year, New South Wales being then nearly 100,000 behind. But by this time this distinction is no longer peculiar to Victoria, with which the mother colony of New South Wales maintains a keen competition. The rate of growth in a population such as that of Victoria is, of course, considerably higher than the rate of growth in our own country. It is, however, worthy of note that what may be called the domestic increase—that is to say, the increase resulting from excess of births over deaths—is nearly the same at both ends of the terrestrial diameter. It is estimated at 1·3 per cent. for England and at 1·6 per cent. for Victoria. The balance of emigration and immigration, however, reduces this growth with us by about a fifth of 1 per cent., so that the net annual increase is not much more than 1·1 in the 100. The tide which thus flows from our shores sets towards the colonies, and from this source Victoria derives an addition to her numbers equal to that of the domestic increment, bringing up her total annual addition to population to just over 3 per cent. From an analysis of the ages at marriage of the contracting parties, it appears that the habits of the colonists are markedly different from those of the mother country. The difference is, indeed, exhibited by the bridegrooms rather than by the brides. In Australia, as here, the favoured age with women lies between twenty-one and twenty-five years; but whereas with us bridegrooms are most numerous at the same period of life, in Victoria the greatest number is grouped between the ages of twenty-five and thirty. This fact is easily understood. The men who emigrate are generally single men, and, on the other hand, the men who form early matrimonial alliances have usually little desire or temptation to seek their fortunes under distant skies. It is interesting to note in this connexion that the delay on the part of the men does not appear to involve any diminution of fecundity, the domestic rate of increase being, as we have shown, slightly above the domestic increase in the British islands. But this point requires for its complete elucidation a statement, which the present report does not furnish, of the proportion of the married to the unmarried population. In the record of mortality the reader of Sir H. B. Loch's report is struck by the apparent mildness of some disorders which are among the most formidable scourges of our own population. Thus bronchitis, which at home exacts a larger number of victims than does consumption, is satisfied in Victoria with fewer than one-half of this proportion. In some measure this may be due to the smaller relative number of old persons in the Victorian community, but it is probably attributable in a still larger degree to the more even climate of that favoured land. Its mild July winter counts for much in this connexion. On the other hand, the perils which peculiarly beset vigorous life are much more serious there than here. Thus fatal accidents are twice as frequent relatively in the colony as at home. "But things like that, you know, must be," and will never counteract or seriously impair the progress of an advancing state.

GERMAN LEGISLATION REGARDING POISONOUS COLOURS.

A MEASURE has just received the Imperial assent in Germany which prohibits the use of colours injurious to health in the preparation of articles of food or confectionery. The substances indicated are colours and colour preparations containing antimony, arsenic, barium, lead, cadmium, copper, quicksilver, uranium, zinc, tin, gamboge, coraline, or picric acid, power being given to the Imperial Chancellor to frame detailed regulations as to the tests to be employed for detecting the presence of arsenic and tin. The covering used for holding or wrapping the articles in question are subject to the above general regulations, but exceptions are made for sulphate of barium, coloured baryta lacquers (free from carbonate of barium), chrome oxide, copper, tin, zinc, and their alloys (when used as metallic colours), cinnabar, oxide of tin, sulphuret of tin (when used in mosaic gilding), and colours burnt into the glass, glaze, or enamel of the receptacles alluded to, as well as those used in painting the outside of packages, &c., composed of impermeable substances. The prohibition of the first-named group of noxious ingredients extends (with exceptions generally corresponding with those already named) to cosmetic preparations, or dyes used for the skin, hair, or mouth, as well as to toys, picture books, flowerpot frames, &c. Special restrictions against the use of arsenic are made with regard to printing and lithographic work upon the objects already specified, as well as with respect to wall-paper, carpets, furniture stuffs, paints, &c.; a small maximum quantity being permitted in textile articles.

DRUNKENNESS AT HOME AND ABROAD.

WHEN so many less momentous subjects are the topic for discussion in International and Colonial Congresses, it is gratifying to learn that we have at length such a Congress for the consideration of Inebriety, or what we prefer to call drunkenness. Dr. Norman Kerr delivered the opening address of the first meeting at the Westminster Town Hall on the 6th inst., and a short report will be found in our issue of July 9th at page 70. It is lamentable to find that in all civilised countries this vice—or, as the Congress prefers to call it, this disease—is so prevalent. The most educated nations—Scotland, Germany, France—are as deeply affected as others; and what is sadder still, they are the most blameworthy in carrying the *materies morbi* to uncivilised peoples, which are being demoralised and destroyed by drink. Our own colonies are drinking badly. Men of authority and medical experience say that in Australia our fellow-subjects drink far beyond anything in this country, and beyond their own potations twenty years ago. Chevalier Max Proskowetz de Proskowmarstorff stated at the Congress

that in Austria drunkenness was increasing everywhere on a dangerous scale. Dr. Petithan of Liège reported alcoholism in Belgium to be increasing with frightful rapidity. Everywhere there are temperance reformers and noble men who set a splendid example of sobriety and self-denial. The leaders of medicine everywhere by their pathological and medical studies demonstrate the injury done by alcohol to the essential organs of the body—heart, liver, kidneys, brain, and bladder. What is to be done against a disease so deep and a vice so fascinating? Dr. T. D. Crothers thinks that in the United States the time is not far distant when the drunkard will be taken from his home and from the street and quarantined in special hospitals. The inadequate Habitual Drunkards Bill of our own country is about to expire, and a few weak attempts at strengthening it are to be made. But these are not radical remedies. Another suggestion at the Congress was that schoolchildren should be taught the effects of drink on health and national welfare. This is to be commended. Mere general intelligence is not so much a safeguard as might have been expected. Specific information drilled into the young of all the European schools seems loudly called for. The medical profession can do much. Statesmen and Royal Families have a grave responsibility brought home to them by Canon Farrar in a heavy indictment in this month's *Contemporary Review*, entitled "Africa and the Drink Trade," which is sad reading for the countrymen of Livingstone and Stanley. England, Germany—especially Germany—and the United States, the chief representatives of that religion of which Channing said, "Christianity is the mighty power before which intemperance is to fall," are pouring rum and other spirits into Africa as fast as their heartless traders can do it, without restraint from their rulers at home, and against the piteous cry of the hapless people and chiefs of the country, who feel that it will destroy them, and that it is a worse curse than the slave trade, which our fathers did so much to exterminate.

PALMER v. MALLET.

THE judgment of Mr. Justice Chitty in this case, of which we gave our readers a report on the 9th inst. (p. 93), has been made the subject of an appeal, and although the decision of Mr. Justice Chitty has been upheld, the discussion has incidentally raised one or two points of special interest to medical men. Lord Justice Cotton, in delivering judgment, laid down the rule as to the construction of a covenant entered into with two persons in the general sense that if the parties who have a common interest take what may be called divisible shares in the common interest, each of them is, to the extent of his share, entitled to sue upon the covenant without joining the other as co-plaintiff. Were the case otherwise—that is to say, if the parties interested in common had an *indivisible interest*,—they would be unable to enforce it separately. In the present case, Mr. Mallet had entered into an agreement not to "carry on the profession of medicine" in Newtown or within a radius of ten miles round it. The agreement was made with Messrs. Palmer and Hall, who were practising in partnership, and the breach complained of consisted in Mr. Mallet acting as assistant to Mr. Hall after a dissolution of the partnership. In these circumstances it was held that Mr. Palmer had a separate interest in the covenant, which entitled him to an injunction restraining its breach, notwithstanding that his ex-partner, who had of course a common interest with himself in the covenant, was a party to the transaction which he impugned. The case is a strong one, and evidently covers a very large number of others; indeed, it probably includes most of those matters which are in actual practice made the subjects of formal agreement. Another point of some interest upon which a judicial ruling was obtained was the true construction of the expression "carry on the profession," &c. The Court said that the word "profession" was more *emphatic* than "business," and pointed to the nature of the work done rather than to the mode of remuneration. It is abundantly plain that this is good sense, and we are glad to find that it is good law. Etymologically and in common use the word "profession" means that which a man openly says that he can or will do. Thus Cicero: "Ego me omnium provinciarum defensorem esse profitebor." To wrest it from this meaning and make it signify the immediate source of a man's income, so that the practitioner who receives fees is following a profession, while the practitioner who accepts a stipend is doing something other than following a profession, would not only have been a piece of very unlearned folly, but also a gross injustice to those who in good faith had used the term in binding instruments.

AN INFIRMARY FOR THE GORDON BOYS' HOME.

THE Committee of the Gordon Boys' Home have recently issued a special appeal for public assistance in establishing an infirmary in connexion with the new buildings in course of erection at Chobham. We have all along taken a lively interest in the progress of this appropriate and most useful memorial, and we are confident that no apology is needed from us in directing once more the attention of our readers to that part of the arrangements which must possess in their eyes an additional claim to support on account of its professional interest. It is but necessary that an establishment which is intended to accommodate temporarily about 160 boys, and may in the future be extended so as to give house room to a much larger number, should contain within it the means of treating apart and effectually such cases of sickness as may from time to time occur. In view of the possible outbreak of infectious disease it is very desirable that a small separate hospital should form part of its plan of structure, and the application just made in the name of the committee is therefore only reasonable. We learn that £500 has been already subscribed, and we feel sure that an equal sum which is asked for in order to defray the estimated cost of the proposed infirmary will not be sought in vain at the hands of Gordon's countrymen.

DISLOCATION OF THE SEMILUNAR BONE INTO THE PALM.

M. ALBERTIN, prosector to the Faculty of Medicine of Lyons, describes in *La Province Médicale* a case in which the semilunar bone was completely dislocated forwards, and some experiments he subsequently made in order to arrive at an explanation of this rare form of luxation. The only recorded cases of dislocation of the semilunar that M. Albertin has found in medical literature are the five instances collected in Hamilton's work, which include the cases of Messrs. Erichsen, Holmes, and Taaffe. Of these five cases three were palmar and two dorsal dislocations. The Lyons case was that of a workman who fell from a height of about twenty-five feet; he struck the ground with the palm of the left hand, which he had instinctively stretched out. He felt a violent pain, and then became unconscious. When examined at the Hôtel Dieu the semilunar bone was found protruding through the skin of the palm in which a rent had been torn. The bone was movable, being only held by some ligamentous remnants. Professor Poncet enlarged the existing cutaneous aperture and removed the bone. The wound was then disinfected, and a counter-opening made In spite of careful antiseptic treatment the patient succumbed in about a week's time with symptoms of tetanus. Unfortunately, the friends resolutely refused to allow a post-mortem examination to be made. In order to study

the conditions under which luxations of the semilunar bone can take place, M. Albertin prosecuted a large number of experiments in Professor Testut's laboratory on eighteen subjects of various ages and of both sexes. He found himself, however, quite unable to produce the dislocation either by blows on the hand when the forearm was fixed, or on the forearm when the hand was fixed, or by violent extension of the hand. The only injury produced was fracture of the lower end of the radius. The conclusion come to by M. Albertin was that the dislocation of the semilunar is, as a rule, prevented by the ligament which binds its palmar surface to the radius, and which, if it remain intact, as it usually does, allows the radius to be fractured rather than the semilunar to leave its place as keystone of the carpal arch. In exceptional cases M. Albertin supposes that this ligament may be very weak, and that then the semilunar may be forced out of its place while the radius remains whole.

KASHMIR MISSION HOSPITAL.

THE native state of Kashmir, or Cashmere, as it is less correctly spelt, is to be congratulated on its possession of a hospital, where much good work, especially of a surgical character, is being done. The medical officers, Mr. Arthur Neve and his brother Dr. E. F. Neve, who are medical missionaries connected with the Church Missionary Society, performed during 1886 no less than 262 major and 596 minor operations, with only two deaths. The affection which may be considered as peculiar to Kashmir, and which has been described by Drs. Elmslie and Maxwell—viz., epithelioma of the abdomen and thigh due to the habit of carrying earthenware pots, or *kangris*, containing burning embers next the skin,—would appear from the report before us to be much less common than it formerly was, as the excisions of these tumours only number twenty-two, whereas several years ago these cases bore a very considerable proportion to the total number of operations. The number of cataracts operated on was twenty-two, of which only three gave unsatisfactory results. The skull was trephined once for epilepsy, the result being some improvement. Stone is not nearly so common in Kashmir as in many parts of the plains. In former years several months would sometimes elapse without a single stone case presenting itself. During 1886 only four cases of vesical calculus were operated on—all successfully,—two by litholapaxy, one by perineal and one by supra-pubic lithotomy. Nerve-stretching was done fourteen times, all the cases being "improved;" twelve of these were cases of leprosy, one was a case of multiple sclerosis, and one of anæsthesia of the limbs. Radical operations for hernia were performed eleven times, complete success being obtained in ten instances. The two fatal cases were a large abscess and a penetrating wound of the abdomen. No abdominal sections were performed.

CONTAGIOUS DISEASES ACQUIRED IN SHAVING.

A CASE which was recently decided in a County Court may serve as a caution to barbers and hair-dressers, who are in danger of forgetting their responsibilities in respect of contagious disease, while it should instruct the public as to some obscure but unavoidable risks to which they are liable. A man who was in the habit of being shaved every Saturday evening at the very modest cost of three-halfpence, was sensible on a certain Sunday of an unaccountable irritation in the skin of his face. He consulted a neighbouring practitioner, who pronounced his trouble to be "parasitic barbers' itch." One form of *sycosis menti*, it will be remembered, is due to the presence of the parasite of ringworm, and, like other cases in which the seats of hair-growth are affected by this troublesome pest, is very intractable. This, doubtless, was the character of the disease in question in the case before us; and the decision of the judge, which was not arrived at without considerable hesitation, held that the barber was guilty of having infected his client by means of a dirty razor, brush, or towel. We confess that this judgment is, to our mind, by no means a clear one. Of direct proof of culpable neglect on the barber's part there was none. At the same time, no other possible source of contagion appears to have been suggested, and certainly the facts that the face was the part affected, and that at the cost a cleanly renewal of shaving materials for each customer was well-nigh impossible, must invest the verdict with whatever support is derivable from circumstantial evidence. If, therefore, we grant that the materials used were not clean, to which of them should blame be specially attached? It seems to us far less likely that the razor was accountable than that either the soap or towel was so, the first-mentioned being so much more easily cleansed. With a view to the prevention of such accidents in future, it seems, therefore, advisable that all barbers should follow the rule already observed by the better class of that fraternity, and in place of using soap in the block form, employ a soap-cream, a little of which can be set apart for each customer. The provision of separate towels and brushes in each case is at least equally desirable, even though it entail an extra halfpenny in the charge.

BRITISH ADMINISTRATION IN WESTERN AFRICA.

IT is told of Zachary Macaulay, father of the distinguished essayist and historian, who was for many years British Governor at Sierra Leone, that his equanimity was never known to be disturbed except when someone ventured the opinion that Western Africa was insalubrious. In spite, however, of the genial Scotchman's championship the unfavourable opinion has continued to this day, and assuredly not without reason. A highly interesting series of reports from the British agents in the West African settlements has just been laid before Parliament, and certainly the state of facts disclosed does but little credit to the British administration of the local government. The following pungent comment, for instance, by Mr. T. D. MacCarthy on the condition of Accra ought not to lie buried in the depths of a parliamentary return. "I cannot help remarking," says he, "and no one can deny, that our system here is an utterly selfish one with regard to the water supply; for whilst the official public are, and, as a rule, always have been, well supplied with pure water for all purposes, the wants of the general public in that respect have been comparatively ignored. . . . . As constituted sanitary officer of this colony, however, and knowing, as I do, the evils in bodily health which accrue to the natives from drinking the foul and brackish water which they do, I earnestly appeal to the Governor's sense of justice and humanity to deal promptly and in a liberal manner with this important question." The urgency of the necessity to which Mr. MacCarthy alludes is irresistibly demonstrated by his description of the bathing pond at Accra. "The water is of a vivid green, turbid, and otherwise filthy." Yet it seems that the native population enjoys no better facilities than these disgusting pools afford. "For the want of public latrines they are compelled to take advantage of the shelter of every bush and old ruin they find at hand; and so, for want of a moderate water supply, the poor creatures are forced to wash their bodies in these stagnant ponds." The only comment which the Governor makes, in transmitting this report, upon the sanitary officer's demand is that some action was taken some time ago towards constructing a rain-water reservoir of a capacity to supply about a pint and a half of water daily to every head of the population. It may afford some measure of the absolutely ridiculous inadequacy of this proposal to say that

the people of Calcutta receive fifteen gallons per head per day. We trust that this matter will not be suffered to remain here, but that, by questions in Parliament or otherwise, pressure will be put upon the Government in order to save the British Administration from the disgrace of sitting by with folded hands in the presence of such a dire necessity as this.

THE AMŒBÆ OF DYSENTERIC STOOLS.

DR. O. UPLAVICI, from an extensive series of observations on dysenteric stools, has come to the conclusion that bacteria, though they are to be detected in large numbers and of many varieties in the evacuations of dysenteric patients, are nevertheless not the cause of the disease. He made out nineteen different micro-organisms, but not one of them was constant. It was otherwise, however, with amœbiform masses which were present in each of the sixty cases of dysentery, some of them of the acute and some of the chronic form, which he examined. These amœbæ have been described by various writers. The first observer to notice them appears to have been Loesh of St. Petersburg, who mentions having found them in a case of dysentery in 1875, since which time Leuckart, Koch, Grassi, Cunningham, Normand, and more especially the Bohemian professor, Dr. Hlava, and Kartulis of Alexandria, have paid considerable attention to these curious masses of protoplasm, both of the two last-named observers having recognised the casual relationship of these bodies to the disease. The observations of Professor Hlava were referred to in THE LANCET of March 19th. Dr. Kartulis found amœbæ in every case to the number of 150 in which he examined the stools, and he entirely failed to find them in the stools of patients suffering from other diseases, such as typhoid fever and phthisis. He was unable to cause the amœbæ to propagate in any medium, and he injected them into the intestines of two pigs and a rabbit without result. Professor Loesh, however, had succeeded in getting them to multiply in one dog out of four into which he injected them. Dr. Uplavici has now prosecuted this line of research with better results. He injected fresh stools containing amœbæ into the rectums of seventeen dogs, and in two cases succeeded in producing dysentery with multiplication of amœbæ. In four cats out of six experimented on positive results were obtained, but no effects were produced on eight rabbits, two fowls, and six guinea-pigs. In one case of dysentery "giant amœbæ" were found, which, when introduced into a cat, were found in the stools.

THE PURITY OF DRINKING FOUNTAINS.

A FEW weeks ago we drew attention to the view maintained by several veterinary surgeons respecting the propagation of glanders by means of public horse-troughs, and we referred to the suggestion that by maintaining a constant flow of water this possibility would be reduced to a minimum. More lately mention has been made in the public press of the necessity of cleansing the interior of drinking fountains in case the common supply-pipes or cisterns within them should in course of time become unwholesome. The danger in this case, however, exists, we should say, rather in theory than in fact—that is to say, if the purity of the primary water supply can be relied on. Public fountains probably, without exception, are supplied from the main water supply. They are consequently not exposed to those unhealthy influences contained in sewer air by which the water supply of private dwellings is so often polluted. Certainly nothing but good could result from regularly cleansing the interior of any such fountain. Traces of earthy deposit would thus be removed, and assurance against contagion made doubly sure. If in any district the main water supply did happen to become impure, as in the case of cholera epidemics, such measures of purification would be absolutely necessary.

A LIBERAL PHYSICIAN AND THE JUBILEE.

THERE is still room for more device in the way of liberality in the Jubilee year, not for mere purposes of charity, but with a view of stimulating science and research and accomplishment of all kinds. We are happy to record a most creditable example in the case of a member of our own profession, who, though since graduation in Edinburgh he has become a dignitary of the Brazilian Empire, where he has been long resident, has not forgotten his native land and his *alma mater*, with all their great claims on the affection of their prosperous children. The *Aberdeen Herald* enumerates as follows the munificent gifts of Dr. Robert Halliday Gunning, who graduated in Edinburgh in 1846, writing a thesis on the "Nature and Treatment of Pulmonary Consumption." Happy the nation and the university that so treat their sons as to keep alive in them, forty years after, sentiments of refined patriotism and affection, to which such gifts testify:—

"1. To the Council of the Royal Society of Edinburgh—a triennial prize of £105, to be named 'The Victoria Jubilee Prize for the Advancement of Science.' 2. To the Council of the Society of Antiquaries of Scotland—£40 yearly, or £120 every three years, as they may prefer, to be named 'The Victoria Jubilee Gift,' the object of the founder being to assist experts to travel, with the view of 'examining other collections, and keeping the Edinburgh Museum as completely furnished with information and examples as possible.' 3. To the Senatus of the University of Edinburgh—£200 per annum, to provide eleven post-graduation triennial prizes of £50 each. These are to be named the Monro, Sir Charles Bell, Edward Forbes, Hutton Balfour, Joseph Black, Christison, Lister, Gregory, John Thomson, Simpson, and Alison prizes, and are to be administered by the Senatus—the incumbent of the chair in connexion with which the prize is to be awarded having a wide choice in the subjects of examination. 4. To the Royal College of Physicians of Edinburgh—£100 triennially, for a prize to bear the title 'Dr. Gunning's Cullen Prize for the greatest benefit done to Practical Medicine.' 5. To the Royal College of Surgeons of Edinburgh—£120 triennially, for a prize to be called 'The Liston Victoria Jubilee Prize,' which shall be open to all Fellows and Licentiates of the College, and shall be awarded for the greatest benefit done to Practical Surgery. 6. To the Edinburgh Association for the University Education of Women—£40 annually, for a bursary to be called 'The Victoria Jubilee Bursary.' In addition to the above, Dr. Gunning has intimated, through Lord M'Laren, a gift of £100 for the Ben Nevis Observatory. There are also gifts of £50 to each of four home mission stations in Edinburgh."

CHOLERA IN SOUTHERN ITALY.

UP to July 15th the amount of cholera in Southern Italy and Sicily was not very large, apprehensions of an extension of the disease having led to some exaggeration as to the extent of the mishief. But since then a decided increase has taken place, especially at Catania, where fifteen deaths occurred on the 16th, and where some twelve to fifteen deaths have occurred daily since then. The Angelo Custode and San Berillo quarters of the town present the conditions most favourable to further diffusion of the infection, they being in a terribly dirty state. Several cases of cholera have also occurred in Francofronte and Paterno, in the province of Catania, and five cases are reported from Grotte, in the province of Caltanisetta. Up to the 20th instant no fresh news had been received as to the outbreak in Calabria, on the main land.

MEDICAL MEN AND PHARMACISTS.

THE Belgian Medical Federation having received a complaint from the Pharmaceutical Association with reference to some animadversions made at a previous session on a number of pharmacists who had, as was averred, trenched unduly upon the province of medical men by doing a prescribing business, a somewhat warm discussion took place, which made it plain that, though the federation had no wish as a body to prefer a formal complaint against the pharmacists, still they as individuals felt disposed to agree with the sentiments which had given umbrage. It was remarked that, if the pharmacists had complained of any doctors infringing their prerogative by openly or in an unauthorised manner selling drugs, the federation, so far from seeking to defend their erring *confrères*, would have heartily joined in censuring them, and so the Pharmaceutical Association might fairly have been expected to disavow all attempts on the part of its members to take upon themselves the office of prescribing. A lame sort of defence seems to have been attempted for the pharmacists on the plea that they are quite as competent to prescribe as doctors are to dispense; but that kind of argument did not receive much attention, the meeting unanimously resolving to pass on to its other business without replying to the complaint. The members whose speeches had given offence stated that they considered themselves solely responsible, and that therefore they should in their individual capacities reply to the pharmacists.

PHYSICS AND PHYSIOLOGY.

THE Physico-Technical Reichsinstitut, recently established in Berlin, will open for regular work on April 1st, 1888, and every guarantee is forthcoming for its completeness and efficiency. The curatorium in connexion with it will offer peculiar advantages to students of the higher physiology, for whom it will suffice to mention that its president is Professor H. von Helmholtz, of the Privy Council. Besides this pioneer in physiological research, there will be attached to the curatorium Dr. Werner Siemens, who bears an honoured name in physics, and whose donation has put the establishment on a working basis; while Professor Förster, Director of the Berlin Astronomical Observatory, with other distinguished *savants* and investigators, will also contribute to its scientific attractions. The Physico-Technical Institute, it may be well to remind our readers, has not been devised for teaching purposes, but purely to facilitate research, in which the curators will be always at hand, as experts and consultants, to assist the investigator. It will be under Government protection and control, the authority ultimately responsible for its success being the Minister of the Interior.

CUTANEOUS OR ANATOMICAL TUBERCLES.

M. AUGUSTE POLLOSSON five years ago examined in the Lyons pathological laboratory four cutaneous or anatomical tubercles, one of which was from the back of his own hand, with the view of determining the truth of the views expressed by many writers, who look upon these anatomical tubercles as closely connected, to say the least of it, with tuberculosis. M. Pollosson, who gives a very minute description of the tubercles (*La Province Médicale*, No. 28, 1887), failed, however, to find any tubercle bacilli, and none of the subjects from whom they were excised have at any time shown any signs of tuberculous disease. His observations are in complete accordance with the short account of these growths given by MM. Cornil and Ranvier. Nevertheless, he does not deny that there are anatomical tubercles which are connected with tuberculosis. He only affirms that the connexion is not invariable.

THE SUPPLEMENTAL CHARTER OF THE ROYAL COLLEGE OF SURGEONS.

WE learn that the petition presented to Her Majesty in Council praying for a Supplemental Charter for the Royal College of Surgeons of England (an abstract of which we published in our issue of June 4th, page 1151) will be considered by a committee of the Privy Council on Sept. 1st next. The Associations of Fellows and of Members should take care that vacation arrangements do not render them oblivious of their claims to be heard on a subject in which they are so deeply and so justly interested.

SIR MICHAEL HICKS BEACH.

IT will have been seen with much pleasure from Sir Michael Hicks Beach's letter to his constituents that he has derived great benefit from his sojourn abroad, and that there is a change for the better in his sight. The cataracts have not increased in density, and a slight defect in the retina and choroid of the right eye, which was recognised by Mr. Critchett before Sir Michael left England, has also undergone improvement.

HOSPITALS FOR INFECTIOUS DISEASE.

THE Local Government Board have consented to recognise the certificate of every medical practitioner as sufficient evidence of the nature of a case to warrant the removal of the patient to the hospitals of the Metropolitan Asylums Board, and have issued an order for this purpose. It is presumed that an order of a relieving officer is to be obtained before the removal of the patient, but in practice this method is generally abandoned, and a telegram to the manager's offices in Norfolk-street is sufficient for the purpose. So far as small-pox is concerned, there is little demand for the accommodation of persons suffering from this disease, for on Saturday there was not a single small-pox patient under treatment in the several hospitals of the Board

PERSISTENT YAWNING AND SNEEZING AFTER REMOVAL OF A TOOTH.

A CASE of a somewhat remarkable character is at the present time in the London Temperance Hospital, under the care of Dr. R. J. Lee. A girl, fifteen years of age, had the last molar tooth in the lower jaw on the right side removed about six weeks ago. No anæsthetic was administered. She was in perfect health at the time. Half an hour after the operation she began to yawn, and has continued to do so constantly since. One yawn succeeds another without interruption, and with an interval of two or three seconds. Galvanism had been tried without effect, and other remedies previous to admission into the hospital. Three days afterwards the yawning changed to sneezing, and recently she has suffered from constant and rapidly succeeding fits of sneezing, each of which paroxysms appears to begin with a yawn. She seems to have no power of controlling herself, or only to a very slight extent; and if she attempts to do so, the next sneeze is more violent.

DEATHS OF EMINENT FOREIGN MEDICAL AND SCIENTIFIC MEN.

THE deaths of the following foreign medical and scientific men are announced:—Dr. Georg Wiesner, Senior Medical Officer of the Hospital of the Holy Ghost, Frankfort-on-the-Maine, and Sanitary Councillor.—Dr. Grewingk, Professor of Mineralogy in Dorpat.—Dr. Alexander Reumont, Sanitary Privy Councillor of Aix-la-Chapelle, at the age of sixty-nine.—Dr. Kempen, Knight of the Order of Leopold, a distinguished Belgian Military Surgeon.

KING'S COLLEGE.

MR. EDGAR CROOKSHANK, M.B., has been elected Professor of Bacteriology, and the plans for a new bacteriological laboratory, to be built during the vacation, have been decided on. Mr. J. W. Groves has been elected Professor of Botany in succession to Professor Bentley, F.L.S., who has resigned the chair. Professor Groves will conduct a practical class in Vegetable Biology.

PROFESSIONAL CONFIDENCE.

A BELGIAN medical man has been condemned by the Court of First Instance, the Court of Appeal, and the Court of Cassation for refusing to give up the name of the mother of a child whose birth he announced. The Minister of Justice stated, however, in the House that there was no law to compel medical men to violate professional secrecy. The case is felt to be a hard one, and the Belgian Medical Federation are about to take the matter up by seeking counsel's advice.

SANITATION IN SHEFFIELD.

SPECIAL care is being given to the flushing of the sewers in Sheffield during this hot and dry weather. Under Dr. Sinclair White's supervision ordinary water-barrels holding some 250 gallons are pierced with an opening about eight inches in diameter, and round this is fastened a species of leather bag, the open end of which is fitted into the manhole of the sewer. By the turn of a lever the whole contents of the barrel are suddenly let off into the sewer, and in this way an effective flush is provided in a simple and inexpensive manner.

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin.—Professor Salkowski, who has charge of the chemical laboratory in the Pathological Institute, is to be offered the newly established Professorship of Medical Chemistry. Professor Ewaldis will be offered the Directorship of the new hospital at Urban.

Brussels.—In the recent second Doctorate Examination twenty-four candidates presented themselves, of whom four only were rejected, all the remainder excepting two passing with honours. This being one of the earlier examinations from which English practitioners who seek Brussels degrees are exempt, there are no successes to chronicle for such. We may mention, however, amongst the successful candidates for the Final Examination the name of Shapoorji Aspaniarjee Kapadia, L.R.C.P., L.R.C.S. Edin., lecturer on Hindustani at University College.

Cracow.—The Professorship of Surgery has been given to Dr. Ludwig Rydygier of Culm, author of a treatise on Surgery in the Polish language, and formerly *privat docent* in Jena.

Dorpat.—The professors of this university, the only one in Russia in which instruction is given through the medium of the German language, were recently directed to prepare to change the language of their lectures to Russian, but they objected so strongly to the change that they all sent in their resignations. This step seems to have produced some effect on the minds of the authorities, for they have announced that the Russification of the University will be deferred for three years. German professors who receive an invitation to Dorpat will have to be careful lest they find themselves shortly after their appointment ordered to lecture in a language with which they are more or less unfamiliar.

Ghent.—A statue of the late M. J. Guislain, the eminent alienist and professor, has been unveiled with an imposing ceremonial, in which M. Henri Lentz, who was deputed to attend on behalf of the Minister of Justice, made an eloquent speech. The medical profession were represented by M. le Professor Lefèbvre, President of the Royal Belgian Academy of Medicine, and M. le Professor Boddaert of Ghent.

Gratz.—Dr. Zuckerkandl, Professor of Anatomy, has been appointed Dean of the Medical Faculty.

Leipsig.—Professor W. Pfeffer of Tübingen has been invited to take the chair of Botany.

Paris.—The *concours* for three posts as *médecin des hôpitaux* has terminated by the nomination of MM. Josias, Juhel-Rénoy, and Hippolyte-Martin. MM. Dujardin-Beaumetz and Sappey have received the decoration of Commander of the Legion of Honour.

Prague (German University).—Dr. Knoll, Professor of Experimental Pathology, has been appointed Dean of the Medical Faculty.

Rome.—Dr. Pasquali has been appointed Ordinary Professor of Midwifery.

ON the 18th inst. the death occurred, at his residence in Cardiff, of Mr. F. W. Granger. On the 14th inst. the deceased was knocked down by an omnibus, and although the injuries received did not at the time of the accident appear serious, the unfortunate gentleman gradually became worse, and the illness, as above stated, terminated fatally. Mr. Granger, who was in his fifty-seventh year, was medical officer for the Cardiff Rural Sanitary Authority, a post he had held since 1872.

DR. SCHNEIDER (*Ministerialrath*) has resigned the post of President of the International Congress of Hygiene at Vienna. As his successor, the Bureau of the Organising Committee have unanimously elected Professor E. Ludwig.

PROFESSOR VIRCHOW, who takes a prominent part in the International Congress of Hygiene at Vienna, will at the close of its sittings start with Dr. Schliemann, the archæologist, for Egypt, on a "working-holiday" tour.

M. PASTEUR having consented to become a candidate for the office of Perpetual Secretary of the Paris Academy of Sciences, the other candidates have withdrawn their applications.

IN the recent matriculation examination at the University of London, 141 candidates passed in the honours division, 522 in the first division, and 94 in the second division.

DR. S. WEST will deliver the Bradshawe Lecture at the Royal College of Physicians on August 18th. The subject will be "Pneumothorax."

MR. CHARLES STONHAM and Mr. W. G. SPENCER have been appointed Assistant Surgeons to Westminster Hospital.

GREAT NORTHERN CENTRAL HOSPITAL.—The annual general meeting of the governors of and subscribers to this institution was held on the 15th inst. The report presented by the Committee of Management stated that the number of patients who obtained relief during the twelve months ended June last was 10,326, being an increase of 1260 over the previous year; of these 326 were in-patients and 10,000 out-patients, the attendances of the latter numbering 32,770. No less than 2570 cases of accident were treated during the same period. The ordinary income of the year amounted to £3481, which was less by £160 than that of the previous year, and the expenditure to £3508, which was £512 less than that of the preceding twelve months. The surplus of the Hornsey Children's Jubilee Fund, amounting to about fifty-five guineas, is to be paid to the building account of the hospital.

ABSTRACT OF

STATISTICS OF THE MONTREAL MATERNITY HOSPITAL.

COMPILED BY W. A. DE WOLF SMITH, M.D. &c.,
PHYSICIAN TO THE MONTREAL DISPENSARY.

THE following is a collection of statistics gathered from the register of the Montreal Maternity Hospital, a small building situated in a very unfavourable part of the city, and possessing very inferior accommodation for the patients, the attendants, and the students who learn the practical part of midwifery at it.

Some years ago the hospital admitted about 130 patients a year, but lately, owing to the fact that the Western Women's Hospital has come into competition with it, the number has fallen to an annual average of less than 100. There is a list of patients' names entered in the register from 1844, but no particulars are given with any of the cases until 1851, and these observations are brought up to the end of 1883—a period of thirty-three years. During this time 3483 patients were admitted, an average of 106 a year. The number of children born in the institution was 3520, there having been thirty-five cases of twins and one case of triplets. The time spent in hospital is not of much importance, but it may be noted that the shortest time spent there was one day—four patients having been in for that length of time only. The longest stay in hospital was 213 days, while the average number of days spent by each patient was twenty-seven. The time of the year does not seem to have had much influence on the births. The largest number of children were born in April, and the other months follow in this order—May, June, October, July, January, November, February, December, March, August, and September, the numbers declining very evenly, however. This differs from Dr. Sutton of Kentucky, as quoted by Dr. Carpenter, who gives the greatest number of births in December and the fewest in January. Dividing the year into quarters, the largest number of births, 973, occurred in the second quarter, 844 in the fourth quarter, 825 in the first quarter, and the smallest number, 815, in the third quarter. This arrangement may be due to the smallness of the numbers considered, as Dr. E. M. Snow, in his report for 1885 to the City of Providence, gives statistics for thirty years, in which the largest number of births, 8459, occur in the fourth quarter, 8149 in the second quarter, 8065 in the third quarter, and 7929 in the first quarter.

The ages of the patients admitted show the greatest range, running all the way from thirteen to forty-eight. Three patients were admitted at thirteen years of age, and two at fourteen. Dr. MacCallum quotes one of the former in his report of the institution, published in 1879. She was, to quote from the report, "a private patient, and when admitted was in short dresses. Although she was short in stature, her hips were wide and her chest well developed. Some days before labour set in an examination of the pelvis was made with Dr. Lumley Earle's pelvimeter. The bulbed extremities could be separated at the brim to the extent of three inches and a half without causing pain, and we therefore concluded that no obstruction would be offered to the passage of the head from narrowing of the conjugate. . . . Her labour was natural, of ten hours' duration, and she gave birth to a male child weighing 7 lb. 1 oz. She was confined on Sept. 13th, 1869, and her fourteenth birthday was in the following month of December." There were fifteen patients admitted over forty years of age, the two oldest being forty-six and forty-eight years of age respectively. The greatest number of patients were admitted at twenty-two years of age, while those at twenty and twenty-four years come next. The average age of all patients admitted was twenty-five. The majority of the patients have been Canadian, though previous to 1869 the majority were Irish—a circumstance which, I think, may be explained by the fact that while the Imperial troops were stationed here the wives of many of the men were confined in the hospital.

The great majority of the labours have been natural, over 93 per cent. having been of that description. A number which would otherwise have been protracted have, I am sure, been shortened in duration by the administration of chloral, now much used in the hospital, alone or in connexion with hot-water douches in cases of rigidity of the parts. In over 90 per cent. of the cases—3404 out of 3558—the head presented. Breech presentations occurred in ninety-eight, footling thirty, and knee three times; the frequency of breech presentations being one in 36·3 cases, this being more frequent than is given by Churchill, and a little more frequent than according to Ramsbotham. Footling presentations occurred once in 118·6 cases, and knee presentations once in 1186 cases, this being nearly three times the frequency given by Madame Lachapelle. Placenta prævia occurred in three cases, and the face presented in eight. The age of the patient does not seem to have had much influence on the duration of labour, nor does the fact of the mother being a primipara or multipara. The duration of labour was as follows:—

Under 1 hour	...	...	...	...	...	71	cases.
From 1 to 4 hours	...	...	...	...		672	"
" 4 to 8 "	...	...	...	...		921	"
" 8 to 12 "	...	...	...	...		654	"
" 12 to 16 "	...	...	...	...		472	"
" 16 to 20 "	...	...	...	...		172	"
" 20 to 24 "	...	...	...	...		96	"
" 24 to 48 "	...	...	...	...		249	"
" 48 to 72 "	...	...	...	...		35	"
" 72 to 120 "	...	...	...	...		10	"

One case lasted seven and another ten days. Thus it is seen that by far the largest number of deliveries were terminated inside of twelve hours. The average duration of labour in 3359 cases was ten hours and twenty minutes, being slightly over the average given by Dr. MacCallum in his report. The average time before delivery at which the membranes ruptured was three hours and a half. In one case they ruptured 120 hours, and in three cases they ruptured ninety-six hours, before delivery; while in 250 cases they ruptured at the moment of delivery. The sex of the child is given in 3477 cases. Of these, 1788 were males, 1689 females—a proportion of 105·85 males to 100 females—this being about the general proportion as regards legitimate children, but somewhat higher than common amongst illegitimate children, which, of course, most of these were.

While there is a predominance in the number of male children born, they also, as an average, are larger in size and weight than female children. The average length of all children born in the hospital was 19·75 in., or, excluding premature births, 19·88 in. The average weight of all children born in the hospital was 7 lb. 10⅝ oz., or, excluding premature births as before, 7 lb. 12⅛ oz. Three children were born measuring 30 in. in length, and five measured 28 in. There were two children (twins) born alive weighing 2⅜ lb. each, but they soon died. Thirteen weighed between 11 lb. and 12 lb., and one each 13 lb., 16 lb., and 16⅜ lb. respectively. The average weight of male children was 7 lb. 12¾ oz., the heaviest weighing 13 lb. The average length of male children was 20½ in., the longest being 30 in. Female children averaged 7 lb. 6¾ oz. in weight, although the largest female child weighed 16⅜ lb., or more than any male. Their average length was 19$\frac{1}{12}$ in., the longest being 28 in. Of 3405 placentæ noted the average weight was 24¼ oz. There were two with children at full term which weighed only 6 oz. each. Eight weighed 8 oz., 387 weighed 16 oz., or less, 2612 weighed between 1 lb. and 2 lb., 360 between 2 lb. and 3 lb., and there were with single children placentæ weighing 50, 51, 52, 53, 55, 56, 58, 60, 64, and 65 ounces respectively. In cases of twins there were two placentæ weighing over 4 lb., and in the one case of triplets recorded the placenta weighed 6½ lb. The shortest umbilical cord measured 4½ in., and the longest 56 in. There were twenty-nine 10 in. and under in length, and twenty-six 40 in. and over, the largest number being 20 in. long, and the general average being 22¾ in.

The duration of pregnancy is a very interesting question, but, unfortunately, these cases are not recorded with sufficient exactness to allow of any calculations being based upon them. Deducting, however, those cases given as premature, and cases in which menstruation continued for some time during pregnancy, we have an average of 294 days as the duration of gestation. The shortest period of gestation is given as 173 days, or a trifle over five months. The greatest number were delivered at 280 days, while there are forty-two cases given in which pregnancy lasted 300 days or more, three of these being at 361, 368, and 385 days respectively—my own opinion being that these are cases of error. Excluding also these cases, then, which seem hardly

possible, we have an average of 293 days as the duration of gestation. The largest number of cases were, of course, primiparæ—viz., over 61 per cent. There were, however, a number of multiparæ, one case being a tenth pregnancy, four cases being eleventh, and two cases twelfth pregnancies.

Of the 3520 children born in the hospital, 150 were dead, a proportion of one in 23·5 nearly, the proportion of dead children born in the St. Louis (Mo.) Female Hospital being at the rate of one in 12·16, according to the report for 1884-85, and in Burlington (Vt.), according to Dr. J. H. Linsley, the proportion in 1885 was one in 19·55. Of 3483 women admitted thirty-five, or a small fraction over 1 per cent., died, a rate of one in 99·5, this being an increase over the number given by Dr. MacCallum, but less than the rate given in the report of the St. Louis Hospital, where it was 1¼ per cent. Of these deaths, eight were from puerperal fever, which broke out in the hospital in 1871 and 1872, in both instances, however, being brought into the hospital from the city, where it had been prevailing for some months previously. Owing to the small accommodation of the hospital, it was closed for a time on both these occasions. Four deaths occurred from uræmic poisoning and one each from thrombus of the labia, congestion of the lungs, heart disease, post-partum convulsions, peritonitis, and Bright's disease. In seventeen cases the cause of death is not given.

Of the 150 children born dead, ninety-two were males and fifty-eight females, or in the proportion of 158·6 males to 100 females. The average weight of these children was—

	Males.	Females.
Maximum	11 lb.	9 lb.
Mean	5¾ lb.	5½ lb.
Minimum	3 oz.	1⅝ lb.

Dead children were distributed as follows, according to pregnancy:—

	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	Total.
Males	54	23	7	3	2	1	1	1	0	92
Females.....	30	15	4	2	1	2	1	1	2	58
Total	84	38	11	5	3	3	2	2	2	150

The average weight of children born dead, according to pregnancy, was as follows:—

	lb. oz.		lb. oz.
1st pregnancies	6 3	6th pregnancies	4 14
2nd ,, ...	6 2	7th ,, ...	6 8
3rd ,, ...	5 0	8th ,, ...	6 14
4th ,, ...	6 15	9th ,, ...	8 14
5th ,, ...	7 5		

Eighty-seven cases are given as being premature births, and of these fifty were males and thirty-seven females. Fifty-five of the mothers were primiparæ and twenty-one were in their second pregnancy. The average weight of the placenta in these cases was 14½ oz. The average weight of all children born prematurely was 3 lb. 5 oz., and the average length was the same in both sexes within a small fraction of an inch—viz., 14⅔ in. Twins occurred thirty-five times, or a proportion of one in ninety-four cases, nearly. In these cases the average duration of labour was 9 hours 50 min., the extremes being 20 min. and 103 hours. The placentæ belonging to these children averaged 34½ oz. in weight, and the umbilical cords averaged 21 in. in length. The average duration of pregnancy in cases of twins was 277 days. Of the seventy children born sixty-one were alive, seven dead, and two stillborn. Seventeen of the mothers were confined for the first time, eleven for the second, and five for the third time, while one case was a fifth, and one an eighth, pregnancy. The average weight of twins was:—

	lb. oz.		lb oz.
Of two males	6 8	Of all children	6 3
,, two females.....	6 6	,, males	6 4
,, male and female	5 13	,, females	6 2

Only one case of triplets is recorded. This was an Irish woman, about thirty-three years of age, and married. It was her third pregnancy, and gestation had lasted 280 days. Forceps were used to deliver one of the children, the others being born naturally. The breech of one presented, and the heads of the other two. The duration of labour was three hours. Two of the children were males, and one female; they measured nineteen, sixteen, and sixteen inches, and weighed 5½ lb., 4¾ lb., and 4¾ lb. respectively. The placenta, as previously mentioned, weighed 6½ lb., and the cords measured fourteen, twelve, and twelve inches. Two of the children were alive, and one was stillborn.

Although no opportunity has existed for the comparison in this hospital, it may be interesting to note the comparative frequency of plurality births among the white and coloured population. In thirty-one years the proportion is as follows:—

Colour.	No. of births.	Plurality births.	Proportion.
White ...	63721	715	1 in 89·12
Coloured ...	2490	53*	1 in 45·1
Total ...	66211	768	1 in 86·21

* All cases of twins.

The above table shows a much larger proportion of plurality births amongst the coloured than amongst the white population.

In the hospital instrumental interference was required in seventy-eight cases, forceps in seventy-five cases, the perforator twice, and the blunt hook once. The forceps were applied once in 46·5 cases, sixty-six cases were primiparæ, and in these the difficulty may be attributed to rigidity of the soft parts, deformity of the pelvis, or to malposition of the head, or to any of these causes acting in combination. The cases of deformity of the pelvis are very few, and this may doubtless be attributed to the fact that the hygienic surroundings of the working classes are better in Canada than in older countries, and also to the fact that girls are not put to work at as tender an age as in some countries. In none of these cases is it recorded that the mothers died, while of the seventy-five children delivered with forceps thirteen, or 17·33 per cent., died. In three cases the forceps were applied to hasten the delivery in cases of convulsions, once in a case where symptoms of exhaustion appeared, and once in a case of narrowing of the conjugate diameter of the brim, with prolapse of the funis. The forceps generally employed are Rigby's and Simpson's, but on one occasion Tarnier's forceps *à aiguille* were used. The average age of these patients was twenty-six, and the average duration of the labours a little over twenty-four hours. Of the children forty-five were males and thirty females. The average length of these children was twenty-one inches for the males and twenty inches for the females, and the average weights were 8 lb. 5 oz. and 7 lb. 12 oz. respectively. The perforator was used twice to diminish the size of the fœtal head. The first case was a girl aged nineteen, in her first confinement. The breech presented, and the case had lasted forty-three hours when, after perforation, she was delivered of a male child, measuring 18 in. in length and weighing 7⅝ lb. The second case was a girl admitted in labour with her second child. The shoulder presented, and the funis protruded from the vulva. Great difficulty was experienced in turning, and after it was accomplished the head had to be perforated behind the ear, when, after a gush of water, the collapsed head was expelled. A full description of the case is to be found in Dr. MacCallum's report, published in vol. xx. of the Transactions of the Obstetrical Society of London. Version was performed in six cases. In all of these the mothers recovered, but in only one instance was the child born alive; in one other case, although stillborn, it was resuscitated.

Hæmorrhage after delivery is of rare occurrence in this hospital, and this is no doubt greatly due to the care with which the uterus is attended to during the expulsion of the child and removal of the placenta, and also to the care with which adherent membranes are treated. The rules laid down for the guidance of students at this hospital are given by Dr. MacCallum in his report, and are very complete. When hæmorrhage does occur after delivery, the treatment consists in strong grasping pressure on the fundus uteri; the application of cold, either externally or through the vagina; and the introduction of the hand into the uterus. Ergot of rye has also been given.

Ten cases were followed by convulsions. In three it is recorded that the urine was albuminous, and in one it is stated that the urine was free from albumen, while the condition of the urine in the other cases is not given. In two cases blood was drawn from the arm in connexion with inhalations of chloroform and the use of chloral and bromide of potassium, which were also used in the other cases. Bleeding was not refrained from because of any belief in its inefficiency, but because the class of patients coming to hospital will not, as a rule, bear it. In three of the cases the forceps are mentioned as having been used to complete the delivery. The average duration of labour in these cases was fourteen hours. Six of the children were males, and averaged 8⅛ lb. each; four were females, and averaged 8½ lb. each. Of the ten children, two males and one female were dead.

Three cases of insanity after delivery are reported—all in primiparæ. The first was the subject of fibroid tumour of the uterus and metrorrhagia, and was an habitual opium eater, although this habit was partly overcome while she was in the hospital. On the third day after delivery she was attacked with acute mania, and became very violent. Under treatment she rapidly improved, and left the hospital on the twelfth day after delivery. The second was a young girl who had been seduced. Five days after a natural labour she was attacked with mania. She improved under treatment, but finally had to be sent to the asylum for the insane. In this case there was a family history of insanity. The third was a girl aged twenty-one, whose labour was natural. She was attacked with insanity six days after delivery, after having received a severe mental shock. She was very violent and abusive, and had homicidal tendencies. In three weeks, however, she recovered sufficiently to leave for home, and had no return of the attacks. The treatment of these cases consisted in full doses of chloral and bromide of potassium, with warm purgatives and nourishing diet.

Among the more curious things met with in the hospital were:—Three anencephalic children, two with supernumerary fingers, one with two teeth, and one covered with hair. Two were born with clubbed feet, and one with a bifurcated cord; one child was born with a spina bifida situated over the sacral region. It was removed to the Montreal General Hospital, and the tumour tapped by Dr. Roddick. The child lived only a few days, however. One blighted fœtus was born with a healthy, well-formed child. It measured 6 in. in length. Two patients were married while in the hospital. One patient was admitted who presented many of the signs of advanced gestation, but on examining her closely it was found to be a case of phantom pregnancy. Three patients menstruated for the first seven months of their pregnancy, and two for the first three months.

KAKKÉ, OR JAPANESE BERI-BERI.

No. I.

KAKKÉ, a complaint now regarded as identical with the beri-beri of India, has long ravaged the great commercial centres of Japan, but it is only in recent years that it has been brought within the range of scientific observation. The first complete accounts of the symptomatology were those given by foreigners resident in the country; but during the last five years the work of research has been prosecuted under more advantageous conditions by highly educated Japanese medical practitioners of the Western school, and one of these, Surgeon-General Takaki, a Fellow of the English College of Surgeons, and a former house-surgeon to St. Thomas's Hospital, has now published in the *Sei-I-Kwai Medical Journal* some original observations that will constitute a great landmark in the study of the disease, and a contribution of no small importance to physiology. Mr. Takaki, having formed a strong opinion that the relative deficiency of nitrogenous elements in the ordinary dietary of his countrymen, as compared with the European standard, might account for the great prevalence of kakké in the naval forces, succeeded in obtaining permission from the Japanese Admiralty in 1883 to make a number of experiments in the service upon a scale of great magnitude. The substance of his creed and the nature of the evidence he gathered to support it by the end of a single year, may be collected from the subjoined extracts from his contribution to the *Sei-I-Kwai Medical Journal* in April, 1885:—

"1. The elements which enter into the formation of the animal tissues, and whose waste must, I believe, bear a definite relative proportion with the food, and therefore, to make up the loss of keeping the tissues in a perfect condition, must be accordingly supplied. For example, the relative proportion of nitrogen and carbon is one to fifteen. An adult male doing very heavy work must have a supply of twenty-three grains of nitrogen at least to every kuwamme (10,042 drachms) of the weight of the body: thus 345 grains is required by a man weighing fifteen kuwamme (15,630 drachms), while the quantity of carbon is fifteen times as much in the course of twenty-four hours. I found by very careful investigations that the food taken by the men attacked by kakké was greatly deficient in nitrogen and contained a great excess of carbon, their relative proportion being one to twenty-eight or more.

"2. The *Riujio*, a training-ship bearing 276 men, including officers, had sailed first from Shinagawa (Yedo Bay) to Wellington, New Zealand; thence to Valparaiso, Chili; from Valparaiso to Calao, Peru; then from the latter port to Honolulu, Sandwich Islands; and thence to Shinagawa, having spent 272 days in making the whole trip. During the voyage 169 cases of kakké occurred, 160 out of which appeared among the sailors and petty officers, with twenty-five deaths before she had arrived at Honolulu. The fact was indeed alarming, and consequently a careful examination was subsequently made by a special committee appointed by the Minister of Marine, and what they have found in regard to the relative proportion of nitrogen and carbon, and their respective quantity, is stated below.

Before the arrival at Honolulu.

Rank.	Daily quantity of nitrogen.	Daily quantity of carbon.	Relative proportion.
Sailors	189 grains	5497 grains	1 to 28
Cadets	241 ,, ...	6331 ,, ...	1 to 25
Warrant officers	280 ,, ...	5902 ,, ...	1 to 20
Officers	359 ,, ...	7578 ,, ...	1 to 20

After the arrival at Honolulu.

Rank.	Daily quantity of nitrogen.	Daily quantity of carbon.	Relative proportion.
Sailors	288 grains	4881 grains	1 to 16
Cadets	325 ,, ...	4772 ,, ...	1 to 11
Warrant officers	365 ,, ...	4707 ,, ...	1 to 11
Officers	437 ,, ...	5901 ,, ...	1 to 11

"The careful examination following the course of the voyage, in regard to the appearance and disappearance of the disease, shows that whenever the quantity of nitrogenous substances was diminished and carbohydrates increased in quantity, it always appeared, but, on the contrary, whenever the reverse was the case, the disease retrogressed or disappeared entirely.

"3. The *Tsukuba*, a training ship, was then sent out to follow the same course as that the *Riujio* had taken, with a supply of the food elements, the relative proportion of nitrogen and carbon of which was one to fifteen. But these two elements were actually taken by the men in the proportion of one to seventeen, the total quantity of nitrogen being 450 grains, and of carbon 7650 grains daily on the average. In the course of the 287 days of the voyage, four cadets and ten men were attacked by the disease, and it appears that these cadets were unable to take condensed milk, while their fellow-cadets had taken one pound of it weekly; also eight out of the ten men had been unable to eat meat as the others did, so that there was a distinct history of the quantity of nourishments having been much less with those affected than with those not affected. There was not a death from disease during the whole voyage.

"4. The relative proportion of nitrogen and carbon in the navy rations in 1883 was one to twenty-eight, showing that there was a great deficiency of nitrogen and great excess of carbon. During 1884 some improvement has been made, resulting in a great increase of nitrogen (yet not reaching the necessary quantity), with a comparative increase of carbon. As, however, the increase of nitrogen was greater, the relative proportion of the two elements came down to one to twenty of nitrogen and carbon in the food."

Then follows a statistical table, demonstrating that a diminution in the relative proportion of carbon and an increase in that of nitrogen in the rations were followed by a decrease in the number of cases and deaths during the year 1884; other tables detailing the relative proportions of nitrogen and carbon in the principal articles of food; and, finally, a series of twelve diet scales. From the latter Mr. Takaki had selected the combinations he considered most suitable, and expressed his conviction that their adoption would ensure the prevention of the complaint.

The subject was continued in a further article in the same journal in April, 1886, and the writer there proffered some interesting figures in connexion with the naval prisoners,

from which we quote the following (with the correction of an arithmetical error occurring in the original):—

Year.	1. Disease.			2. Diet.		
	Number of prisoners.	Number of cases of kakké.	Per-centage.	Nitrogen, in grains, daily.	Carbon, in grains daily.	Rates of N. & C.
1883	113	69	61·06	216	7054	1 to 32·65
1884	128	73	57·03	258	6614	1 to 25·06
1885	168	0	0·0	289	5839	1 to 20·20

The most significant statistics, however, are those published in the *Sei-I-Kwai Journal* for May of the present year, which carry the results to the end of 1886. Mr. Takaki there gives the following comparative table showing the number and proportion of cases of kakké for nine years, from 1878 to 1886 inclusive.

Comparative Table showing the Number and Proportion of Kakké Patients during nine years.

Year.	Force.	Patients.	Ratio of patients per 100 of force.	Admitted to hospital.	Ratio of admitted per 100 of patients.	Dead.	Ratio of dead per 100 of patients.	Invalided.	Ratio of invalided per 100 of patients.
1878	4528	1485	32·79	325	21·89	32	2·15	...*	...*
1879	5081	1978	38·92	485	24·51	57	2·88	8	0·40
1880	4956	1725	34·81	319	18·49	27	1·57	9	0·52
1881	4641	1163	25·06	300	25·79	30	2·58	16	1·38
1882	4769	1929	40·45	545	28·25	51	2·64	17	0·88
1883	5346	1236	23·12	378	30·59	49	3·96	4	0·32
1884	5638	718	12·74	209	29·10	8	1·11	1	0·14
1885	6918	41	0·59	25	60·97	—	—	1	2·44
1886	8475	3	0·04	—	—	—	—	—	—

* Uncertain.

From this we shall see that if the whole period be divided into two parts, the first including the six years from 1878 to 1883, the second the three years from 1884 to 1886, during which the new dietetic rules were in force, the percentage ratio of kakké cases to the naval force fell from 32·79 in the first term to 4·45 per cent. in the second; while the percentage mortality of the disease shows a reduction from 2·63 to 0·37, and in the last two years to zero.

A second table, which gives the diminution in the number of days during which kakké patients were under treatment, after the adoption of the new dietary, is equally telling,

Comparative Table showing the Number of Days of Treatment under Different Grades of Service during four years.

Year.	Duration of ordinary work under treatment.	Duration of light work under treatment.	Duration of rest.	Duration in hospital.	Total.
1883	25,235	7612	7894	22,534	66,275
1884	10,687	4875	5542	11,309	32,213
1885	154	69	175	1012	1410
1886	28	—	71	—	99

and will afford material for the financial authorities of the navy when they desire to strike a balance between the increase of outlay in food and the saving in hospital and other expenses connected with the treatment of the disease. Whatever be the result of such a calculation from the pecuniary point of view, there is no doubt of the immensity of the gain as judged by the standard of the political economist and the humanitarian. Nor is the interest of the question by any means confined to Japan or to students of the particular disease which has been taken as a measure of the results of the experiment. With regard to kakké, there is reason to believe that it still exists amongst the Chinese, who, indeed, were the first to describe its symptoms, and if we assume that the complaint is identical with beri-beri, the area of its ravages will be found to extend over the greater part of our Indian Empire, Ceylon, and even to certain regions of South America. It is, moreover, known that European residents in these places share the danger with the native population, as instanced but recently by the grave losses inflicted by beri-beri upon the Dutch troops in India, and hence, even if we are moved by no higher considerations than those of selfishness, it is desirable that we should give a share of our attention to the etiology and treatment of the disease.

HOSPITAL SUNDAY FUND.

THE following are the principal contributions to the Hospital Sunday Fund, which have been lately received at the Mansion House:—All Hallows the Great and Less (with additions), £55; St. Pancras Parish Church, £50; Newcourt Congregational Chapel, Tollington-park, £51; St. Matthew's, Bayswater, £200; St, Nicholas', Chislehurst (including a further £100 from Richard Foster, Esq.), £217; Spanish and Portuguese Synagogue, £50; the Great Synagogue, £247; Bayswater Synagogue, £96; New West-end Synagogue, £68; and Central Synagogue. £63.

The fund at the time of our going to press amounts to nearly £39,000.

A meeting of the Council of the Fund is to be held at the Mansion House at 4 P.M. on the 25th inst., to order the payment of awards to hospitals and dispensaries, as recommended by the Committee of Distribution.

WILLS OF MEDICAL MEN.

THE will of Mr. William Chapman Begley, M.R.C.S. and F.R.C.P. Lond., late of 26, St. Peter's-square, Hammersmith, who died on April 12th last, was proved on the 27th ult. by Mrs. Jane Begley, the widow, and Mr. Claudius Francis Du Pasquier, the executors, the value of the personal estate exceeding £6000. The testator bequeaths £4200 consols, with any additions he may have been able to make thereto, upon trust to pay the dividends to his wife for life, and then for the College of the Holy and Undivided Trinity in the University of Dublin for the establishment of four studentships in medicine in the said college, tenable for four years, to be held by members of the college who have passed through the greater part of the undergraduate course in arts, and shall not have commenced the study of medicine. The residue of his property he gives to his wife.

The will of Frederick John Hensley, M.D., late of 10, Coleherne-road, South Kensington, who died on April 4th last, was proved on the 19th ult. by Mr. Thomas William Hensley and Miss Emily Marianne Hensley, the son and daughter, two of the executors, the value of the personal estate exceeding £1600. The testator gives the goodwill of his medical practice, together with drugs and books, and a piece of freehold land at Finchley, to his son Philip Henry, and £50 to his servant Sarah Brown. The residue of his property is to be divided between his nine children in various proportions.

The will of Mr. John Chatto, M.R.C.S., librarian to the Royal College of Surgeons of England, late of 3, Chapel-road, Notting-hill, who died on April 19th, was proved on the 18th ult. by Miss Jane Chatto, the sister and sole executrix, the value of the personal estate exceeding £3000. The testator gives all his property to his said sister.

The will of John Henry Cook, M.D., late of 44, Chepstow-place, Bayswater, who died on May 28th last, was proved on the 14th ult. by Mr. John Wickham Barnes, the sole executor, the value of the personal estate exceeding £6000. The testator gives certain furniture to his housekeeper, Elisabeth Henderson, £100 to his executor, and legacies to relatives and others. He leaves upon trust for his nephew, Richard Todd, £1000 Brazilian 5 per cent. bonds and £1000 Costa Rica 4 per cent. bonds, and for his niece, Mrs. Martha Ward Jull, £2000 Brazilian 5 per cent bonds, for life, and at their deaths to their respective children. The residue of his property he leaves upon trust for his said nephew and niece, and on their decease for their children, share and share alike.

The will of Mr. Charles James Bracey, M.B., F.R.C.S., late of 155, Hagley-road, Edgbaston, Birmingham, who died on April 21st last, was proved on the 1st ult. in the Birmingham district registry, by Mrs. Edith Jane Bracey, the widow and sole executrix, the value of the personal estate exceeding £5000. The testator gives all his property to his said wife absolutely.

The will of John Vaux, M.D., late of Chestergate, Macclesfield, who died on January 30th last, has been proved at the District Registry of Chester by Miss Mary Elizabeth Vaux and Miss Charlotte Marie Dyhrenfurth Vaux, the daughters and executors, the value of the personal estate amounting to upwards of £3000. The testator, after exercising the power of appointment given him under the will of his father, gives all his linen, plate, glass, pictures, household effects, surgical instruments, and books to his wife for life, and then to his daughters. The residue of his property he leaves upon trust to pay the interest (as also the capital, if his trustees shall think fit) to his wife for life; and at her death the ultimate residue is to be divided between his children in equal shares.

The will of William Murray, M.D., late of Burley, near Otley, Yorkshire, who died on April 13th last, has been proved at the Wakefield District Registry by Mrs. Sarah Anne Murray, the widow, Mr. James Murray, the brother, and Mr. Robert Fox, the executors, the value of the personal estate amounting to upwards of £3500. The testator gives all his household furniture and effects to his wife. The residue of his property he leaves upon trust to pay the income thereof to his wife for life or widowhood, and at her death or marriage for his children in certain proportions.

The will of Mr. John Hurd, late of Yatton, Somersetshire, surgeon, who died on April 10th last, was proved on the 4th ult. by Mrs. Matilda Hurd, the widow and sole executrix, the value of the personal estate exceeding £1000. The testator gives all his property to his wife absolutely.

The Scotch Confirmation, under the seal of the Commissariat of Fife, of the trust disposition and deed of settlement, of William Traill, M.D., late of Woodwick, granted to Mrs. Anna Harvey or Traill, the widow, David Thomson Glover, and Allan Briggs, the executors, was resealed in London on the 11th inst., the value of the personal estate exceeding £4000.

The following legacies have recently been left to hospitals and other medical institutions:—Mr. Wm. Dollin Alexander, formerly of Summit House, Clapton, but late of Broomhill Bank, Tunbridge Wells, and 9, Second Avenue, Brighton, £100 each to the Stoke Newington Dispensary and the Tunbridge Wells Dispensary.—Mr. John Bacon, late of Liverpool and of Clwyd Hall, Llanychan, Denbighshire, £1000 each to the Liverpool Northern Hospital, the Liverpool Southern Hospital, Bootle Borough Hospital, Stanley Hospital, Kirkdale, near Liverpool, the Liverpool Royal Infirmary, and the Denbigh Infirmary; and £300 to the Convalescent Institution, Woolton.—Lieut.-Col. Wm. Henry Earle, late of Andover, Southampton, £300 to the Winchester County Hospital.—Right Hon. Henry Baron Hindlip, late of Hindlip Hall, Worcester, and Alsop-en-le-dale, Derby, £1000 to the Burton-on-Trent Infirmary.—Mr. Abraham Flatau, formerly of Ropemaker-street, Finsbury, but late of 197, Maida-vale, £100 to such Charities as his executors may think fit.—Mr. Walter Samuel Tollet Sandilands, late of Fenchurch-avenue, and Highfield Grange, Sandown, Isle of Wight, £500 each to the London Hospital, East-end, the Royal Free Hospital, Gray's-inn-road, the Cancer Hospital, Brompton, and the Royal Hospital for Incurables, Putney-heath; and the ultimate residue of his property to such charitable institutions and in such parts as his wife shall appoint.—Miss Iry Webster, late of Exeter, £2000 to the Devon and Exeter Hospital.—Miss Maria Beaumont, late of 122, Albion-road, Stoke Newington, £1000 to Mrs. Pennefather to establish a bed in the hospital under her superintendence at the Mildmay Conference Hall; £1000 for the benefit of the hospital at Furnilie-square, Bethnal-green; £1000 each to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, and the Royal Hospital for Incurables, Putney; £500 to the Asylum for Invalids, Stoke Newington; and £200 to the Home for Confirmed Invalids, Aubert-park, Highbury.—Mrs. Charlotte Frances Brownley, late of Fairlawn, East End, Finchley, £250 to the Small-pox and Vaccination Hospital, Highgate, and the University College Hospital; and £50 to the Convalescent Home, Finchley.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Oldham Urban District.—The report which Dr. James Niven has presented to the Corporation of Oldham on the health of the borough during 1886 is one of the most complete documents which we have received. Commencing with a geographical description of the district, and showing by means of a large plate what is the superficial geology, it next proceeds to discuss all the various matters influencing health in the borough, such as dampness and faulty construction of dwellings, smoke nuisances, trapping and ventilation of drains and sewers, building on "tips," and such-like subjects. We are glad to observe a strong condemnation of the practice of building back-to-back houses, the rooms in which are never adequately ventilated. It only needs a large aggregation of such dwellings in any district to bring about that special musty smell, so akin to that which prevails where typhus exists, which attaches to this class of dwelling. Open space about individual houses and the possibility of a through current of air are of the utmost importance, especially in our larger cities and towns. As regards work done in the borough, there is a satisfactory record. The Westhulme sanitary hospital was twice full, and, under the pressure of some typhus, the separation of diseases could not be properly carried out, scarlatinal patients being placed in the same ward as those suffering from typhoid. Some additional hospital provision will now be needed. A wave of scarlatina passed over the borough, and there was a by no means inconsiderable prevalence of typhoid fever. The statistical portion of the report is very exhaustive, the value and bearing of vital statistics being discussed at considerable length in their various aspects. The general death-rate during 1886 was 22·7 per 1000. In connexion with summer diarrhœa, Dr. Niven is of opinion that the disease ought to be grappled with, and he proposes to issue a sanitary guide for distribution at each house within the borough, to assist in diminishing mortality from this cause. And as regards more general action in the same direction, he advocates special flushing of sewers, the use of potent disinfectants in the midden pans, the ventilation of houses and the cooking and boiling of all infants' food as aids in preventing this fatality. Amongst the various appendices to the report are meteorological and other records, which if continued year by year will afford very valuable material for studying the causes of preventable disease amongst the population.

Kingston-on-Thames Urban District.—Estimating the population at 22,655, Dr. Shirtliff shows a death-rate of 19·3 per 1000 in 1886. The diphtheria death-rate is one of the most serious features of the district, for it has now for several years past been largely in excess of the rate prevailing in the country generally, and so long as the conditions of contamination by sewer air remain, the authority cannot even plead that they have done their utmost to prevent it. Again and again has this matter been pressed on the authority, the necessity for breaking the direct connexion between the rain-pipes and the sewers having been specially advocated. Such direct connexion turns these pipes into ventilators during dry warm weather, and their position endangers the health of the inmates of rooms in the upper storeys of houses. Other matters, such as the provision of a hospital and an abattoir, also call for action.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 5796 births and 3660 deaths were registered during the week ending July 16th. The annual rate of mortality in these towns, which had been 17·6, 18·1, and 19·6 per 1000 in the preceding three weeks, further rose last week to 20·7. During the thirteen weeks of last quarter the death-rate in these towns averaged 19·8 per 1000, and was 1·4 below the mean rate in the corresponding periods of the ten years 1877-86. The lowest rates in these towns last week were 13·6 in Portsmouth, 14·4 in Bolton, 14·7 in Nottingham, and 15·5 in Wolverhampton. The rates in the other towns ranged

upwards to 22·9 in Salford and Newcastle-upon-Tyne, 24·5 in Manchester, 29·9 in Leicester, and 31·1 in Preston. The deaths referred to the principal zymotic diseases in the twenty-eight towns, which had been 486 and 673 in the preceding two weeks, further rose last week to 880, owing to the increased mortality from diarrhœa; they included 497 from diarrhœa, 152 from measles, 132 from whooping-cough, 50 from scarlet fever, 25 from "fever" (principally enteric), 23 from diphtheria, and only one from small-pox. No death from any of these zymotic diseases was registered during the week in Halifax, whereas they caused the greatest mortality in Newcastle-upon-Tyne, Preston, and Leicester. The highest death-rates from diarrhœa occurred in Salford, Wolverhampton, London, Leeds, Preston, and Leicester; from measles in Manchester, Birkenhead, and Newcastle-upon-Tyne; and from whooping-cough in London, Birkenhead, and Bradford. The 23 deaths from diphtheria in the twenty-eight towns included 16 in London, 2 in Manchester, and 2 in Newcastle-upon-Tyne. Small-pox caused 1 death in Greater London, but not one in any of the twenty-seven large provincial towns. No case of small-pox was under treatment on Saturday last in the metropolitan hospitals receiving cases of this disease. The mortality from diarrhœa only slightly exceeded the average for the season. The deaths referred to diseases of the respiratory organs in London, which had been 199 and 189 in the preceding two weeks, further declined last week to 188, and were 21 below the corrected average. The causes of 79, or 2·2 per cent., of the deaths in the twenty-eight towns last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Blackburn, Cardiff, and in four other smaller towns. The largest proportions of uncertified deaths were registered in Oldham, Newcastle-upon-Tyne, and Bradford.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·5 and 18·8 per 1000 in the preceding two weeks, rose again to 19·5 in the week ending July 16th; this rate was 1·2 below the mean rate during the same week in the twenty-eight large English towns. The rates in the Scotch towns last week ranged from 14·6 and 17·3 in Perth and Aberdeen, to 27·3 in Leith and 28·1 in Greenock. The 487 deaths in the eight towns last week showed an increase of 18 upon the number in the previous week, and included 43 which were referred to whooping-cough, 30 to diarrhœa, 11 to scarlet fever, 4 to "fever" (typhus, enteric, or simple), 3 to measles, 1 to diphtheria, and 1 to small-pox; in all, 93 deaths resulted from these principal zymotic diseases, against 85 and 84 in the preceding two weeks. These 93 deaths were equal to an annual rate of 3·7 per 1000, which was 1·3 below the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of whooping-cough, which had been 43 and 46 in the previous two weeks, declined again last week to 43, of which 16 occurred in Dundee, 12 in Greenock, 8 in Glasgow, and 5 in Leith. The deaths attributed to diarrhœa further rose, from 10, 18, and 22 in the preceding three weeks, to 30 last week, of which 14 occurred in Glasgow, 5 in Edinburgh, 4 in Paisley, and 3 in Dundee; these 30 deaths were 3 above the number returned in the corresponding week of last year. The fatal cases of scarlet fever further rose from 7 and 8 in the previous two weeks to 11, and included 4 in Glasgow, 3 in Edinburgh, and 3 in Dundee. The 4 deaths referred to "fever" showed an increase upon the low numbers in recent weeks, while the three fatal cases of measles corresponded with the number in the previous week. The death returned from small-pox was one attributed to chicken-pox in Glasgow. The deaths resulting from acute diseases of the respiratory organs in the eight towns, which had been 80 and 76 in the previous two weeks, further declined last week to 65, and were 8 below the number returned in the corresponding week of last year. The causes of 67, or more than 13 per cent., of the deaths registered in the eight towns during the week were not certified.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been 29·4 and 26·6 per 1000 in the preceding two weeks, rose again to 27·9 in the week ending July 16th. During the thirteen weeks of last quarter the death-rate in the city averaged 28·7 per 1000, the mean rate during the same period being but 18·0 in London and 19·4 in Edinburgh. The 189 deaths in Dublin last week showed an increase of 9 upon the numbers returned in the previous week; they included 28 which were referred to measles, 12 to diarrhœa, 3 to "fever" (typhus, enteric, or simple), 2 to whooping-cough, and not one either to small-pox, scarlet fever, or diphtheria. Thus the deaths resulting from these principal zymotic diseases, which had been 40 and 47 in the preceding two weeks, declined last week to 45; they were equal to an annual rate of 6·6 per 1000, the rates from the same diseases being 6·3 in London and 2·4 in Edinburgh. The fatal cases of measles, which had steadily increased in the preceding ten weeks from 6 to 36, declined again last week to 28. The 12 deaths attributed to diarrhœa showed a considerable increase upon recent weekly numbers; and those referred to "fever" had also slightly increased, while the fatal cases of whooping-cough showed a decline. The deaths of infants were more numerous than in either of the preceding two weeks, while those of elderly persons had further declined. Four inquest cases and 6 deaths from violence were registered; and 38, or rather more than a fifth, of the deaths occurred in public institutions. The causes of 29, or more that 15 per cent., of the deaths registered during the week were not certified.

Correspondence.

"Audi alteram partem."

THE RELATIVE RANK QUESTION.

To the Editors of THE LANCET.

SIRS,—I read with much pleasure the letter of "A. M. D." in your issue of May 14th on the above subject. I beg leave to add my humble testimony to its excellence, and only wish that a copy of it were placed in the hands of every young officer of the medical staff, and with it also a copy of your sound and sensible leader on the same subject in the same issue. It is a matter of congratulation that the utter foolishness of this claim for honorary rank has been so well exposed.

Like another of your correspondents, "Army Surgeon," I can speak for many of my brother officers, and say with him, "We do *not* want to be called captains and colonels; we do *not* want to sink our profession by adopting utterly incongruous titles; we do *not* want to become the laughing-stock of the army." I trust that this most mischievous agitation will be stamped out now, once and for ever—this most ignoble and contemptible striving after titles to which we have not a shadow of claim; and I am quite familiar with all the arguments used in favour of it.

I cannot but think that this desire to appear in borrowed plumes, this most illegitimate aspiration, is begotten of a low origin, and nourished in the main by those who very naïvely admit that on retiring from the service they have no position.—I am, Sirs, yours faithfully,

J. P. H. BOILEAU,
Surgeon-Major of twenty-three years' full-pay service.

Punjab, June 20th, 1887.

HEALTH OF MARGATE.

To the Editors of THE LANCET.

SIRS,—Anyone reading your article in last week's issue, founded on Dr. Page's report to the Local Government Board, would certainly draw the conclusion that Margate is a hotbed of fever, and a place which it is not safe to visit. Such an impression, if conveyed by the report, is a false one, and, being most injurious to the town, I trust you will allow me to contradict it. Margate has its faults—offensive privies in the poorer districts, closets often without cisterns, slaughter-houses, and other defects,—but is far from being in the generally unwholesome condition described in your article and in Dr. Page's report.

Last year an epidemic of typhoid fever invaded Margate and most of the neighbouring towns and villages. The epidemic was not limited to Margate only, and this is shown by the fact that the joint hospital for Ramsgate, Margate,

and the rural districts received sixty-two cases of typhoid, of which thirty-three came from Margate. Dr. Page does not mention this fact, but it is important as indicating that the disease was due to epidemic causes, and was not entirely endemic, as his report leads the reader to believe.

During the nine years preceding 1886 twenty-five deaths occurred from typhoid fever, inclusive of deaths happening in the Hospital for Infectious Dieases, an average of less than three per annum; in each of two of the years there was only one death. Many of these cases were imported. Is it probable that Margate, frequented during the season by about half a million of visitors, many from the worst parts of London, would under any system of drainage show a materially diminished mortality from this cause? There is in the report no comparison with other seaside towns in this respect. The heading of the report states it to be an inquiry into the continued existence of typhoid fever in Margate. Is it correct to describe a place with this mortality as suffering continuously from typhoid fever? I have read the report carefully, and I cannot find that the general death-rate is given or alluded to; the geological features of the district, and the structure and height of the joint hospital wall are described, but there is no allusion to the general death-rate; the fact is, the death-rate is low, would show favourably for the town, and is omitted. Surely in a report on the general sanitary condition of Margate the death-rate is of some importance, and should be included. I submit that an official report should be impartial, and should convey the whole truth; this report does not do so, and is calculated to reflect credit neither on the Local Government Board nor on the officer who made the inquiry.

The epidemic affected the poorer classes chiefly, and for the most part houses with open privies. There was scarcely an instance of any of the better lodging houses being attacked. I did not, for instance, hear of a single case of typhoid in any of the houses on the sea front.

I had reason to doubt the water supply, and I thought that excessive pumping might suck back impurities which pass into the overflow on its way to the sea. The Town Council, acting on my advice, have dug a new well, whence they get a perfectly pure supply of water; they have not yet altogether abandoned the old well, but as soon as more adits are cut in the new one they will do so. I think with less pumping at the old well they are not likely to exhaust far enough to reach the sources of pollution.

The lower levels of Margate for the most part drain into the sea; the remainder of the houses and those of the higher ground drain into cesspools. We are condemned for these, and they are supposed to contaminate the subsoil by soakage. If, however, the chalk close to a cesspool be examined, it is found to be white, clean, and without smell. Scientific opinion is against cesspools, but in Margate, where the houses are not crowded, 3067 houses in 995 acres, they have answered fairly well. We escape, at any rate, soil pipes under the basements, and faulty plumbing out of sight, also the nuisance of street gratings and ventilators.

Facts, however, are better than arguments, and the following figures I am prepared to substantiate: 1. There is not at the present time a single case of typhoid fever in Margate. I append to my letter copy of certificate from the medical practitioners to this effect. 2. In a population of 18,008 there were only 144 deaths during the half-year ending June, 1887, giving a gross death-rate of 16 per 1000 per annum. Deducting fifteen deaths which occurred in hospitals and ten among visitors, the death-rate is 13·2 per 1000. 3. There were but three deaths from zymotic disease in Margate during the half-year, in addition to one in the joint hospital. The deaths were due—two to diarrhœa, one to scarlet fever, and one to croupous laryngitis. There was not one death from zymotic disease within the radius of the borough during the last quarter ending June, 1887.

These figures need no comment, and if any of your readers would like to verify them, I shall be pleased to enable them to do so.

I am, Sirs, your obedient servant,

WM. KNIGHT TREVES, F.R.C.S.,
Medical Officer of Health for the Borough of Margate.

Margate, July 19th, 1887.

We, the undersigned, comprising the whole number of physicians and surgeons practising in Margate, hereby certify that we have not at the present time any case of typhoid fever under our care in the borough of Margate, and that, to the best of our belief and knowledge, there is not a single person suffering from typhoid fever within its radius.

(Signed)	A. NORTON TAYLOR.	WM. PRICE.
	A. W. SCATLIFF.	F. E. NICHOL.
	ARTHUR ROWE.	GEO. M. PITTOCK.
	T. SMITH ROWE.	E. A. WHITE.
	WM. KNIGHT TREVES.	ROBT. THOMSON.
	BERTRAM THORNTON.	AMBROSE WILLY.
	ROBT. PETTICREW.	W. W. COLBOURNE.

Dated this 18th day of July, 1887.

I certify the above to be a correct copy.
WM. KNIGHT TREVES.

*** Notwithstanding this letter, we are compelled to regard the sanitary condition of Margate as very unsatisfactory; and nothing but the abolition of cesspools, the provision of a proper system of drainage and of a safe water supply, will make Margate fit to be regarded as a first-class health resort.—ED. L.

"TRACHEOTOMY AND INFLATION IN THE TREATMENT OF A STILLBORN CHILD."

To the Editors of THE LANCET.

SIRS,—Referring to Dr. Watson's interesting paper in your issue of to-day, permit me to remark that asphyxia in newly-born children is due to the fact that during inspiratory efforts the epiglottis is drawn down like a valve over the superior orifice of the larynx, so that air cannot obtain access to the lungs. The manner in which asphyxia thus arises can be readily demonstrated by examining the throat of a dog whilst under the influence of anæsthesia, in which animal the epiglottis and upper part of the larynx can be seen with the naked eye. As the result of this observation it is clear that the form of asphyxia under consideration can be prevented by drawing the epiglottis forward with a forceps.[1] This manœuvre being of the greatest importance, because it dispenses entirely with the necessity for tracheotomy, perhaps you will not object to reproduce from my article[2] the drawing of my forceps for the epiglottis, which I specially designed for the purpose indicated.

I am, Sirs, yours truly,
CHAS. E. JENNINGS.

Upper Brook-street, Grosvenor-square, W., July 16th, 1887.

"SURVIVANCE AFTER GUNSHOT WOUNDS OR OTHER INJURIES OF THE HEART."

To the Editors of THE LANCET.

SIRS,—Under the above heading are some very interesting cases collected by Dr. Curran; I should like to add one to the number. About twelve years ago, being in New Zealand, I was one day walking across a plain, having a sporting Snider rifle with me, but no dogs. Presently I saw a large wild boar trotting gently across the open at about 250 yards distance from me, and showing a good broadside. I knelt down and fired at him, and felt sure I had hit him. He, however, turned sharp round at the shot and immediately charged straight down upon me at a tremendous pace. I instantly reloaded and reserved my fire for a close shot, when within

[1] THE LANCET, 1885, vol. i., p. 291. [2] Loc. cit.

thirty yards he suddenly went head over heels, and running up to him I found him stone dead. Curiosity made me carefully open the thorax. I found the lower third of the heart completely torn away, right and left ventricles being cut in half, and the two sets of valves exposed. I found the bullet, quite flattened, under the skin of the opposite side. Passing through the shield and impinging against a rib on the near side had flattened the bullet, which had then cut through the heart like a knife.

I am, Sirs, yours obediently,

JOHN A. FRANCIS, M.R.C.S., L.S.A.

Southsea, July 19th, 1887.

BIRMINGHAM.

(From our own Correspondent.)

INFANT LIFE INSURANCE.

FIVE inquests held in one day on the bodies of infants calls for more than usual attention, even from those indifferent to the ordinary value of life. Coupled with the question of infant life insurance, it affords material for grave reflection. In one of the cases reported the mother admitted that two of the three illigitimate children she had borne had died in early infancy, and that in both she had received insurance money. In another instance the mother acknowledged that she had buried five out of seven children, in each case obtaining insurance money. Still another instance where the parents had buried three children in as many weeks, the sum of £12 being the amount obtained from a similar source. It would be manifestly wrong to attempt to cramp the habits of thrift and independence among the working classes, but some legislative interference on the subject of infant insurance would be in the face of these facts highly desirable. An inquiry of this kind might indicate whether illegitimate children ought to be insured at all, and it would be likely to point out the ages at which infants should be insured, and the amounts to be received. Going further, it might rightly call attention as to the influence of malnutrition and overlaying in producing these disasters, which form such an appalling feature in the mortality of our large towns. The subject is one of national importance, and calls for some efforts towards a solution and a remedy.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.

The fifty-eighth annual meeting of this charity was held on the 14th inst., under the presidency of the Mayor, Sir Thomas Martineau. The report showed a steadily increasing progress in the usefulness of the charity, but, as is getting a common matter of observation in these bad times, a diminution in the amount of money at the disposal of the committee. The total attendances of out-patients during the year was nearly 2000 in excess of the previous year. The expenditure showed £4183, and the income £3629. The reserve fund exhibited the low sum of £12. There was some congratulation in the remainder of the building debt being paid off, but the general financial position of the charity appealed strongly to the support of the benevolent and those interested in maintaining its usefulness and popularity.

BIRMINGHAM KYRLE SOCIETY.

A meeting of those interested in the formation of recreative evening classes for the education of children who have left the elementary schools was held lately, and was well attended. Considerable success has attended the movement in this town, and its objects cannot be too highly commended. The efforts to make education interesting and agreeable cannot be too strongly advocated. The proposals embraced subjects such as musical drill, cooking, dressmaking, knitting, imaginary shopkeeping, athletics, wood carving, inventive drawing, elocution, and dramatic reading, with a number of other subjects calculated to promote utility, ornament, and occupation. It is to be hoped that means will be provided, and teachers found to carry out this laudable work, in which the pursuit of work and pleasure can be so advantageously combined, with good results to the growing population.

CARDINAL NEWMAN.

The many admirers of His Eminence Cardinal Newman will be pleased to know of his unabated mental vigour and general health. Though now in his eighty-sixth year, physically feeble, and unable to walk with ease, he continues to work with system and regularity in his daily life. At the annual play of the Oratory School, in which the Cardinal's adaptation of Terence's play of "Pincerna" was performed, the venerable Cardinal sat through the whole of the time, and was apparently much interested in the manner in which the pupils played their parts.

Birmingham, July 20th.

NORTHERN COUNTIES NOTES.

(From our own Correspondent.)

THE ROYAL WEEK IN NEWCASTLE.

THE great Cattle Show held here under the auspices of the Royal Agricultural Society of England last week has proved a great success. Except on the last day the weather was all that could be desired. On the first popular day nearly 80,000 persons paid for admission. The North-Eastern Railway alone brought 60,000 passengers into the city. The show on the whole attracted more than 126,000 visitors, being about 12,000 more than the previous one held in this city about twenty-three years ago. The Mining and Engineering Exhibition had also a good week, receiving about 120,000 visitors. The whole passed off without a single serious accident to mar the week's festivities.

NEWCASTLE HOSPITAL FOR INCURABLES.

A new departure was made at this very useful charity last week, when the Charities' Committee of the Newcastle Corporation, who are its governors, gave a very successful garden party to their friends, and at the expense of the members of the committee, so as in no way to trench upon the resources of the charity, which, as I told you in a previous letter, are derived from the revenues of an ancient charity founded for the benefit of lepers. The hospital at the present has about thirty inmates, and Mr. J. A. Angus is the medical superintendent. He, in the course of the afternoon, conducted suitable parties of the visitors over the hospital, and introduced them to the patients. The idea of the garden party was to enlist the sympathy of the public, and let them see the good work done by the hospital; and it was properly considered that the entertainment would have a good and cheering effect on the patients, as showing them that they were not altogether cut off or isolated from outside feeling, especially as no pecuniary aid was required. I do not know who thought first of the party; but, at all events, it was a happy and humane idea; and Mr. Angus, who is distinguished by his kindness to the poor, is to be congratulated on the result.

THE CHINESE SEAMEN IN THE TYNE.

The transport *Tae Nan* has now left the Tyne for Germany, with some 300 native Chinese sailors on board, and, I believe, in fair health; but Dr. Slater informs me that more than 300 have been left behind to take out from the Tyne two steam cruisers now receiving their armaments at the Elswick ordnance works. It is announced that a portion of the crews are to join in some military sports in North Shields this evening, on the invitation of Colonel Pilter, and the Chinese Admiral Lang, in his reply, consents to his men entering into a competition among themselves at a feat, the object of which is to throw very heavy weights into the air and catch them on their descent. This is a trial of strength which is very common in the northern provinces of China, from which many of the seamen come.

NEWCASTLE ROYAL INFIRMARY.

A conference of the working men's delegates has been held with the infirmary subcommittee, and it has been arranged that for each £10 subscribed annually a governor may be elected. It has also been recommended that all honorary medical officers are to be in future governors *ex officio*.

Newcastle-on-Tyne, July 19th.

SMALL-POX EPIDEMIC AT ABERDEEN.—The outbreak of small-pox which was reported to have occurred in Aberdeen about the beginning of June has within the last few days exhibited such a tendency to spread that the Public Health Committee of the town has decided to erect two special wards at the City Hospital for the treatment of patients.

EDINBURGH.

(From our own Correspondent.)

UNIVERSITY COURT MEETING.

A MEETING of the University Court took place on Monday, the 18th inst., at which Dr. Heron Watson, the recently elected Assessor for the General Council of the University, took his seat for the first time. There was a good deal of routine business gone through, and certain points of greater general interest and importance were also considered, among them the representation of the General Council of the University, adopted at a stormy meeting of that body some months ago, asking for a "consideration of the sound construction of the Universities Act, 1858, read along with the Medical Acts, 1858 and 1886, relative to the election of the representative of the University in the General Medical Council." It has been urged, with some show of reason, that the General Council of the University should carry out the functions of an electorate in this respect as representing the University in its widest sense. Precedent, on the other hand, and a strong conservative instinct among its members, would point to the Senatus Academicus as the proper electing body. In the circumstances, specially in view of the strong public feeling on the question, the Court has done wisely in deciding to take counsel's opinion on the sound interpretation of the Acts under consideration. The point is a purely legal one, and can be best settled by the dispassionate judgment of a legal expert. Amongst other matters, the Court considered and approved the report of the Committee in charge of the University library, which was of a satisfactory nature, and reflected credit on Mr. Webster, the lately appointed librarian, whose energy and intelligence are doing much in developing the usefulness of the library.

THE ROYAL SOCIETY OF EDINBURGH.

The last meeting of the session was held last Monday, when a number of papers were read, and the work of the session brought to a close by an address from the Vice-President, Sheriff Irvine, who occupied the chair. His statement of work done was highly satisfactory, and shows that the Society is in a flourishing condition. A Victoria Jubilee prize, founded by Dr. Gunning, and amounting to 100 guineas annually, has been this year awarded to Sir William Thomson, President of the Society, for his remarkable series of papers on Fluid Motion. One of the papers read on Monday was of considerable meteorological interest. It is a record of observations made by Mr. Stack, assistant at the Ben Nevis Observatory, on the temperature of winds. The observations were made with an apparatus called the "thermic windrose." Not only were the maximum and minimum temperatures of the various winds measured, but their range of rise and fall in temperature in the different seasons was in each case recorded. The warmest is found to be south wind; the coldest the north-east wind; while that from the south-east has the greatest range of temperature, representing a variation of 24·3° between the maximum and minimum recorded.

THE EDINBURGH UNIVERSITY UNION.

The Students Union, on behalf of which there have been such loyal exertions among present and former students and their friends, is now to be commenced. An estimate of £10,000 for the cost of the buildings has been accepted by the Buildings Committee, and the work will proceed at once, the site having been already acquired.

THE DISCUSSION ON SCARLET FEVER.

The Medico-Chirurgical Society is to hold its meeting for the discussion on Scarlet Fever to-morrow, the 20th inst. The discussion is to be opened by Dr. W. Allan Jamieson, physician to the City Fever Hospital, and it is understood that the question of the origin of epidemics will be largely dealt with, in connexion with the recent violent outbreak of the disease in this city. The higher etiology is also to be to some extent discussed. It is reported that the committee appointed to look into the question in relation to Dr. Edington's researches have not been able to come to a definite conclusion, and will only present a preliminary statement of their work.

Edinburgh, July 19th.

GLASGOW.

(From our own Correspondent.)

POISONING CASES.

A NUMBER of serious cases of poisoning have occurred in Glasgow and its vicinity lately. About a fortnight ago, in Pollokshaws, eight children suffered from arsenical poisoning, and of these two died, the others recovering only after very prompt and energetic treatment. They had picked up in the street a quantity of a white, crisp substance, which they took for alum, but which consisted almost entirely of arseniate of soda. The symptoms presented were typically those of arsenical poisoning. At Whiteinch, one of the western suburbs of Glasgow, about twenty children were reported as being more or less ill from eating "jubilee shortbread," which they had bought at a stand in the street. The symptoms complained of were those of some powerful gastro-intestinal irritant—vomiting, pain, purgation, and collapse. No death occurred. The nature of the poisonous ingredient in the shortbread has not been made out, but it is supposed that it was either nitrate of potassium or carbonate of ammonia; the latter is often used by pastry bakers, and may have been impure or excessive in quantity. The fact that the symptoms were due to the cakes eaten was proved by an experiment, which may be commended to the attention of anti-vivisectionists. The father of one of the children who suffered gave a cake to a dog, which, by promptly turning sick and vomiting copiously, gave evidence of the poisonous nature of what had been eaten. At Greenock, four children showed very serious symptoms after having eaten certain roots which they had dug up in marshy places by a country roadside, under the impression that they were "ladies' nuts," a kind of "earth nut." One of the children died within an hour, after suffering from vomiting, convulsions, and coma. The other three children recovered. The roots eaten are supposed to have been those of Œnanthe crocata, one of the water-dropworts. The roots of this plant form fleshy knobs, which are not unpleasant to the taste, but are very poisonous. A correspondent of a local newspaper, commenting on these cases, gives instances in which this plant proved fatal in its effects. "At Clonmel, some years ago, eight boys, mistaking this plant for wild celery, ate plentifully of its roots. A few hours afterwards the eldest boy became suddenly convulsed and died; and before next morning four of the other boys died in a similar manner. Of the other three, one was maniacal several hours; another lost his hair and nails; but the third escaped unhurt. Hooker gives six species of this genus as native of the British Islands, all of which are more or less poisonous, but he mentions Œnanthe crocata as 'a rank poison.'"

JUBILEE HONOURS.

The distribution of jubilee honours to members of the profession in Glasgow has given much satisfaction here. Sir George Macleod is the first Glasgow surgeon who has received the honour of knighthood, a title which in his case will be worn worthily and with dignity. The absence of another name from the list caused not a little surprise, and even irritation; but it is satisfactory to learn that Professor Gairdner remains untitled of his own choice, having respectfully declined an honour similar to that conferred on his colleague; he does this for reasons which, as he himself puts it, "do not in the least affect his grateful reception of Her Majesty's message as a token of goodwill, or his hearty congratulations to friends who have been the recipients of like distinction." Another mark of the esteem in which Dr. Gairdner is universally held has been accepted by him however—namely, the degree of M.D. (*honoris causâ*), conferred on him recently by the University of Dublin.

THE VICTORIA INFIRMARY, GLASGOW.

This hospital, formerly known as the Southern Hospital, is now to be known by the above title, having received Her Majesty's consent thereto in recognition of her jubilee year. The scheme for its erection progresses favourably. Money is being subscribed with fair rapidity, about £13,000 having been already received. When the sum of £15,000 is reached building operations will commence. Various meetings have been held in the southern suburbs of Glasgow, such as Pollokshields and Rutherglen, and at these the cause of the

infirmary has been enthusiastically adopted. It is hoped that the foundation-stone of the building may be laid next year, and possibly by some member of the Royal Family, as our exhibition building will be ready for a similar ceremony about the same time.

BURGH POLICE AND HEALTH (SCOTLAND) BILL.

This unfortunate Bill has been shelved again. The Convention of Royal Burghs having brought this measure again under the notice of the Secretary for Scotland, and having represented its extreme importance and urgency, have received from Lord Lothian an intimation, "that owing to the state of public business the Bill cannot be introduced this session with any possible chance of its becoming law." This is the more regrettable as the measure has already passed in separate sessions third readings in both Houses of Parliament, and has been favourably reported on by a Select Committee of each House, and, indeed, a common understanding had been arrived at by those interested in its provisions, so that it was expected that it might pass without serious opposition. Meanwhile the sanitary law of Scotland stands just as it did twenty years ago.

GLASGOW ROYAL INFIRMARY MEDICAL SCHOOL.

At the close of the summer session yesterday, Dr. Macintyre was presented with a handsome marble dining-room clock, with suitable inscription, and statuettes, as a mark of the esteem in which he is held by the medical students who have been attending the classes in this institution. Dr. Clark, dean of the school, presided.

Glasgow, July 20th.

DUBLIN.

(From our own Correspondent.)

THE CONJOINT EXAMINATION SCHEME.

COMPLAINTS are numerous about the *viva-voce* part of the examination in physics at the first professional examination held recently under the conjoint scheme. It is alleged that the questions in this subject were mostly outside the prescribed course of examination. Certainly the rejections were so excessive that no other explanation appears to be tenable, and it seems that the examiners—and I do not exclude those in anatomy—expected too much from the candidates who came before them.

OPHTHALMIA IN THE CORK WORKHOUSE.

For a considerable time past eye diseases have been prevalent among the children in this workhouse, but recently it has reached such proportions that Dr. Sandford has been requested to report on the matter to the Board of Guardians. He states that in the boys' school 74 per cent. of the pupils are suffering from affections of the eyes, of greater or less severity. In the girls' school 80 per cent. are affected, while in the infants' school 63 per cent. have some form of eye disease. In both the boys and girls in hospital the majority of the patients are sufferers from ophthalmia. With few exceptions the disease takes the form of granular ophthalmia and its complications, and is in many instances associated with other scrofulous affections. It varies in severity from the latent forms, in which its presence is not apparent except by close examination, to an unsightly condition in which the eyes are a mass of disease, and vision is hopelessly impaired or destroyed. In the boarded-out children, on the other hand, there were only 2 cases in over 100 children. The prevalence of the disease in the chronic form is due to various causes, one of the most important being its communicability from one child to another by direct contact. A number of children are crowded together, most of whom are constitutionally predisposed to the reception of such an affection, the chances of the spread of infection being enormously increased by the use of a common lavatory, the same towel or roller being used by a number of children. Under such circumstances the introduction of one case into a school previously free from disease would render its contraction by the other children almost a certainty. Once contracted, the nature of the disease is to assume a chronic form—kept alive by favourable surroundings, such as overcrowding, insufficient ventilation or improper food, and breaking out at times into an active condition when stirred by some special stimulus or local irritation, such as exposure to cold or wet, to dust or rain. It is to be hoped that the disease may be effectually stamped out by acting on the admirable suggestions made by Dr. Sandford.

ZYMOTIC DISEASES IN DUBLIN.

During the five weeks ended July 2nd, the mortality from measles was doubled as compared with the previous month, but, on the other hand, there was a marked decline in the number of deaths from whooping-cough. It is interesting to note (the occurrence being most unusual) that there was not a single fatal case of typhus fever recorded during the month. Measles, it may be added, is still prevalent in Dublin. Last week 36 deaths were ascribed to this disease, and there are 141 cases under treatment in hospital.

ROYAL MEDICAL BENEVOLENT FUND SOCIETY OF IRELAND.

Her Majesty, who is patron of this Society, having completed the fiftieth year of her reign, it has been suggested that a special Jubilee collection should take place. About £100 has already been contributed towards the fund in question, and the amount, when complete, will be distributed, in honour of the occasion, to the many annuitants relieved by the operations of this charitable Society.

Mr. Broomfield, of the Carmichael College of Medicine, has been presented with an address and testimonial on the occasion of his approaching marriage.

Dublin, July 19th.

THE SERVICES.

Deputy Surgeon-General R. Hungerford has been appointed Principal Medical Officer, Eastern District, vice Surgeon-General Fox, now at Aldershot, and Deputy Surgeon-General S. A. Lithgow, M.D., C.B., has been appointed Principal Medical Officer of the South-Eastern District.

WAR OFFICE.—Army Medical Staff: Deputy Surgeon-General Sir James Arthur Hanbury, K.C.B., M.B., F.R.C.S.I., to be Surgeon-General, vice J. O'Nial, C.B., granted retired pay (dated June 14th, 1887); Deputy Surgeon-General Randolph Webb, from half-pay, to be Deputy Surgeon-General, vice Sir J. A. Hanbury, K.C.B., M.B., F.R.C.S.I. (dated June 14th, 1887); Surgeon Norman Smyth, M.D., resigns his commission (dated July 20th, 1887).

YEOMANRY CAVALRY.—West Somerset: Surgeon S. Farrant is granted the honorary rank of Surgeon-Major (dated July 16th, 1887).

ARTILLERY VOLUNTEERS.—2nd Volunteer (Devonshire) Brigade, Western Division, Royal Artillery: E. Holberton Edlin, Gent., to be Acting Surgeon (dated July 16th, 1887); Honorary Assistant-Surgeon G. Miles resigns his commission (dated July 20th, 1887).—1st East Riding of Yorkshire: Thomas McCraith Foley, Gent., to be Acting Surgeon (dated July 20th, 1887).

ENGINEER VOLUNTEERS.—1st Cheshire: Acting Surgeon Andrew Stewart is appointed Second Lieutenant (dated July 20th, 1887).—2nd West Riding of Yorkshire (Leeds): Charles Malcolm, Gent., to be Acting Surgeon (dated July 20th, 1887).

VOLUNTEER SUBMARINE MINERS (the Tees Division).—William Jones Williams, M.D., to be Acting Surgeon (dated July 20th, 1887).

RIFLE VOLUNTEERS.—1st Volunteer Battalion, the Queen's Own (Royal West Kent Regiment): Acting Surgeon Eyre Ievers, M.D., resigns his appointment (dated July 16th, 1887).

Medical News.

YELLOW FEVER.—Reports are current in New York of an alarming prevalence of yellow fever at Memphis, Tennessee.

AN epidemic of hysteria is reported to have broken out amongst the women at Agosta, a populous village near Subiaco.

NEW FRENCH HOSPITAL.—His Royal Highness the Comte de Paris has given a donation of £100 to the building fund of the new French Hospital which is to be erected in Shaftesbury-avenue. Her Royal Highness Madame la Comtesse de Paris has paid, for the same fund, to the bankers of the institution the sum of £600, being a share in the proceeds of the bazaar held at Willis's Rooms in June.

THE SHEFFIELD WATERWORKS.—At a special meeting of the proprietors of the Sheffield Waterworks, held on the 11th inst., the terms of agreement recommended by the directors for the sale of the undertaking to the corporation were unanimously confirmed. These terms are equivalent to a purchase price of rather over £2,000,000. The Corporation Bill seeking the power of purchase is now before Parliament, and is expected to pass as an unopposed measure.

THE HEAT IN THE UNITED STATES.—The heat throughout the United States on the 16th inst. was unusual and extreme. The following figures show the temperatures recorded: Pittsburg, 101°; Washington and Baltimore, 99°; Pekin (Illinois), 103°; Joliet (Illinois), 113°; St. Louis, 107°; Chicago, 102°. The 17th inst. was the hottest day known at Philadelphia, with one exception in 1876, for thirty years. On the 18th the excessive heat continued, and many deaths from heat have, as might be expected, occurred.

GUY'S HOSPITAL.—On the 19th inst. a meeting of the subscribers to the Special Appeal Fund on behalf of this institution was held, when it was reported that the fund now amounted to £75,000. After paying off a debt to the bank, a sum of £60,000 was left. The interest of this sum, however, is not sufficient to maintain the 500 beds, but it is hoped that it will be possible to save the principal, and that with increased subscriptions in the future the work of the hospital may be satisfactorily carried on.

TESTIMONIAL TO MR. GODART.—On Monday, the 18th inst., in the presence of the staff and a large number of the past and present students of St. Bartholomew's Hospital, Mr. Savory presented a testimonial to Mr. Godart, upon the occasion of his departure for Sydney. In an eloquent address, Mr. Savory alluded to Mr. Godart's long connexion with the school of St. Bartholomew's Hospital, and concluded by presenting him with a gold watch and a purse containing fifty guineas from his friends amongst the past students and staff of the hospital, and a testimonial, illuminated on vellum, and signed by the consulting and acting medical and surgical staff.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—Sir James Paget, president, took the chair at the quarterly court of directors of this Society, held on Wednesday, July 13th. One member was elected, the deaths of four were reported, two gentlemen had ceased to be members, and the election of another was declared void. A sum of £1384 was voted for distribution amongst sixty-four widows and nine orphans. The application of a widow was considered, and a grant made. The expenses of the quarter were £37 odd. The treasurer reported the receipt of the legacy of £5000 from the executors of the late Sir Erasmus Wilson, a vice-president of the Society.

AFTER-CARE ASSOCIATION.—The annual meeting of this Association, founded for the benefit of poor and friendless female convalescents on leaving asylums for the insane, was held on Thursday last, at 83, Lancaster-gate, W. In the absence of Lord Meath, Dr. Hack Tuke took the chair. The meeting was addressed by the Rev. C. J. Ridgeway, Rev. E. S. Derrick, Dr. Geo. H. Savage, Dr. T. Claye Shaw, Dr. S. Russ Philipps, and others. A fair amount of progress had been made during the past year, but funds are much wanted to extend the work of the Association. There are about 30,000 women of various callings and conditions of life in lunatic asylums in England and Wales. Full information of this valuable work may be obtained of the secretary, Mr. Thornhill Roxby, Emblewood, Osbaldiston-road, N.

MEDICAL NOTES IN PARLIAMENT.

Army Medical Officers.

IN the House of Commons, on the 14th inst., in answer to Dr. Tanner, Mr. Stanhope stated that the reduction in the troops in Egypt had resulted in a temporary excess of medical officers in various military districts, of which Cork was one, and all military medical officers not exclusively employed in the station hospital are available for duty in barracks. The number on the roll at Cork on May 30th was fourteen, of whom two were on leave; and on the same date there were eighty sick in the station hospital. It is the practice to place one medical officer on orderly duty each day, so that with twelve officers available the turn of each would come round every twelfth day. The usual term of rotation depends on the number of officers, which for Cork (exclusive of Cork Harbour) is eight. The other officers, although not on duty, are all employed. He added that in consequence of the present temporary excess admission to the medical staff has been suspended until the supernumeraries are absorbed.

Contagious Diseases in the Colonies.

In answer to Mr. Stuart, Sir H. Holland said that the colonies in which contagious diseases ordinances were in force in October last were Jamaica, Trinidad, Barbadoes, Labuan, Ceylon, Hong-Kong, the Straits Settlements, Malta, and Fiji. In Jamaica, Trinidad, and Barbadoes repealing laws have been passed, which have been confirmed. In Labuan the ordinances have been suspended, and their repeal has been ordered. In Ceylon, Hong-Kong, and the Straits Settlements the Governors have been directed to introduce measures repealing the ordinances, but there has not yet been sufficient time to carry out the instructions. In the case of Malta the Governor has been instructed to invite the Council to follow the example of the United Kingdom in this matter. In Fiji, in view of the special circumstances affecting the health of the native population, and especially in consequence of the coolie immigration from India, he has decided not to press for the immediate repeal of the ordinances. In the case of Gibraltar, where there is no ordinance, the Governor has been directed to put an end to the system of the examination of women. In St. Helena the ordinance of 1865 was allowed to lapse in 1879.

Alleged Ill-treatment of a Lunatic.

On the 19th inst., Mr. W. Corbet asked the Secretary of State for the Home Department what was the result of his inquiries into the alleged ill-treatment of a lunatic in Stafford Goal.—Mr. Matthews replied that he had received a report from the Prisons Commissioners of the inquiry which has recently been held at Stafford Gaol, and which was conducted by the visiting committee assisted by an inspector. The inquiry as a whole is not yet complete, but it appeared from the report to be clear that the injuries which were found upon the man were self-inflicted, that no violence was done to him by the prisoners with whom he was placed, and generally that the amount of the injuries had been much exaggerated. Further investigation would be made as to whether all was done that should have been done to prevent the prisoner from injuring himself. At the same time there was no doubt but that the magistrates committed an error of judgment in sending him to Stafford Gaol, for his mental condition showed that he should have been removed at once to an asylum.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ADIE, A. J., L.R.C.P.Lond., L.S.A., has been appointed Resident Obstetrical Officer to Charing-cross Hospital.

BARTON, G. P., L.S.A., has been appointed House-Physician to Charing-cross Hospital.

BOWER, E. J., M.R.C.S., L.R.C.P.Lond., L.S.A., has been appointed House-Surgeon to Charing-cross Hospital.

HAYNES, SYDNEY W., M.B., C.M.Ed., has been appointed an Honorary Administrator of Anæsthetics to the Birmingham Dental Hospital.

HODGSON, JOHN, M.B.Lond., M.R.C.S., has been appointed Assistant Surgeon to the Oldham Infirmary.

LINGWOOD, E. H., L.S.A., has been appointed House-Physician to Charing-cross Hospital.

LITTLEWOOD, J. O., L.R.C.P.Lond., M.R.C.S., has been appointed Medical Officer for the Walsall Borough District of the Walsall Union.

MAITLAND, EDWARD W., L.R.C.P.Ed., M.R.C.S., has been appointed Assistant Surgeon to the Oldham Infirmary.

PEDLEY, F. NEWLAND, F.R.C.S., L.D.S., has been appointed Senior Dental Surgeon to Guy's Hospital, vice Moon, resigned.

ROBERTS, THOMAS H., L.R.C.S., L.R.C.P.Ed., has been appointed Medical Officer for the Township of Saddleworth.

SANDELL, H. W. A., L.R.C.P.Ed., M.R.C.S., has been appointed Medical Officer for the Upper District of the Leighton Buzzard Union.

SILK, J. FREDK, W., M.D., has been appointed Anæsthetist to the National Dental Hospital.

SMITH, E. J., M.R.C.S., L.S.A., has been appointed House-Surgeon to Charing-cross Hospital.

STONHAM, CHARLES, F.R.C.S., has been appointed Assistant Surgeon to Westminster Hospital, vice A. M. Sheild, resigned.

WILDERS, JOHN ST. S., M.R.C.S., L.S.A., has been appointed Honorary Consulting Surgeon to the Birmingham Dental Hospital, vice Furneaux Jordan, resigned.

Vacancies.

In compliance with the desire of numerous subscribers, it has been decided to resume the publication under this head of brief particulars of the various Vacancies which are announced in our advertising columns. For further information regarding each vacancy reference should be made to the advertisement.

BELGRAVE HOSPITAL FOR CHILDREN, Gloucester-street, S.W.—House-Surgeon. Salary at the rate of £20 per annum, with board, &c.

BIRMINGHAM GENERAL HOSPITAL.—Resident Medical Officer. Salary £130 per annum, with residence, board, and washing.—Two Assistant House-Surgeons. No salary, but residence, board, and washing will be provided.

CARLISLE DISPENSARY.—Junior House-Surgeon. Salary £100 per annum, with apartments (not board).

GENERAL HOSPITAL FOR SICK CHILDREN, Pendlebury, Manchester.—Senior and Junior Resident Officers. Salary £100 and £80 per annum respectively, with apartments and board.

LAMPETER UNION.—Medical Officer, Medical Officer of Health, and Public Vaccinator. Salaries and fees about £90 per annum.

LONDON FEVER HOSPITAL, Liverpool-road, N. — Assistant Resident Medical Officer. Salary £120 a year, with board.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY, Berner's-street, W.—Resident Librarian. Salary commences at £250 per annum, to which are added residence, coals, and gas.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House-Surgeon and Secretary. Salary £80 per annum, rising by annual increments of £10 to £100 per annum, with residence, board, washing, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

DUNLOP.—On the 10th inst., at Long Sutton, the wife of J. Gordon Dunlop, M.B., of a daughter.

JAMES.—On the 16th inst., at Butler House, Kilkenny, the wife of C. E. James, B.A., M.B., T.C.D., L.R.C.S.I., of a son.

MACKERN.—On the 13th inst., at Calle Lavalle, Buenos Ayres, the wife of George Mackern, M.D.Lond., M.R.C.S., of a daughter.

MARSH.—On the 14th inst., at Grasmere, Rotton-park-road, Edgbaston, the wife of F. Marsh, F.R.C.S., of a daughter.

PECK.—On the 18th inst., at Gower-street, the wife of Awdry Peck, M.A.Oxon., M.R.C.S., L.R.C.P., of a son.

PESKETT.—On the 17th inst., at Oakover, Burnham, Somerset, the wife of A. W. Chalmers Peskett, M.A., M.B., B.C.Cantab., of a daughter.

PRESTON.—On the 16th inst., at Liskeard, Cornwall, the wife of George Preston, M.R.C.S., L.R.C.P., of a son.

TOWNSEND.—On the 15th inst., at Jalapahar, Darjeeling, the wife of Surgeon-Major Townsend, A.M.S., of a daughter.

MARRIAGES.

BLATHERWICK—FRANKS.—On the 19th inst., at St. Peter's, Streatham, by the Vicar, the Rev. A. C. Tarbutt, M.A., assisted by the Rev. Charles G. Gull, M.A., Henry Blatherwick, M.R.C.S., L.R.C.P., of Woodlawn, Dulwich Village, second son of Deputy Surgeon-General Blatherwick, of Southampton, to Kate Temple, only daughter of the late J. F. Franks, of Streatham-common, and Catherine S. Temple Franks, of Crown-hill, Norwood.

BRENCHLEY—SPURLING.—On the 15th inst., at St. Giles's, Camberwell, Algernon Brenchley, M.D., to Marion, eldest daughter of Henry John Spurling, of De Crespigny-park, S.E.

EDSELL—HAINES.—On the 14th inst., at St. Mary's Church, Byfleet, George Alfred Edsell, L.R.C.P., M.R.C.S., to Annie Isabel, eldest daughter of William Haines, Esq., of Coleman-street, E.C., and The Cedars, Byfleet, Surrey.

GOLLAND—REID.—On the 19th inst., at St. John's, Altrincham, by the Rev. C. E. Golland, M.A., brother of the bridegroom, assisted by the Rev. F. Wainwright, M.A., Vicar of the Parish, Alfred Golland, M.R.C.S., L.R.C.P.E., of Altrincham, to Mary (Minnie), third daughter of Alexander Reid, Esq., of Woodlands-park, Timperley.

GRIFFIN—STROTHER.—On the 14th inst., at Shaugh Prior Church, Roborough, South Devon, Richard Michael Griffin, M.B., M.Ch., to Mary Julia, daughter of the Rev. James Baxter Strother, M.A., Vicar of Shaugh Prior.

PARKHILL—ABBOTT.—On the 12th inst., at St. Giles's, Reading, by the Rev. C. F. J. Bourke, Samuel J. Parkhill, M.D., of Church Gresley, Derbyshire, to Lydia (Dick), daughter of the late Charles W. Abbott, of Maripool, Derbyshire, and niece and adopted daughter of the late Wm. Carrick Crofts, M.R.C.S.Eng., of Church Gresley.

WAYLEN—LEAKE.—On the 2nd ult., at St. George's Cathedral, Perth, Western Australia, Alfred Robert Waylen, M.D., Colonial Surgeon and Principal Medical Officer, to Louisa, widow of the late Sir Luke Samuel Leake, Speaker of the Legislative Council of Western Australia.

WEARING—COMER.—On the 7th inst., at St. Margaret's, Anfield, Liverpool, by the Venerable the Archdeacon of Man, assisted by the Rev. C. S. Nicholl, Richard Wearing, M.D.Edin.Univ., of Wavertree, to Helena Blanche, younger daughter of George Comer, of Larkfield, Wavertree.

DEATHS.

BAZELEY.—On the 17th inst., at Queen Anne-terrace, Plymouth, Wm. Bazeley, M.R.C.S., L.S.A., aged 49.

DAWSON.—On the 14th inst., at his residence, Regent-street, Great Yarmouth, John Dawson, M.D., aged 46.

LYONS.—On the 13th inst. (of phthisis), on board s.s. *City of Bombay*, while entering the docks, Thomas Lyons, L.R.C.P., L.S.A., Civil Medical Officer, Bogra, India, aged 47.

RONALD.—On the 17th inst., at Wellington-square, Ayr, N.B., John Ronald, C.M.Glas., J.P., in his 84th year.

ROSE.—On the 14th inst., at Diss, Norfolk (of apoplexy), Fredk. Robert Rose, M.R.C.S., L.S.A., in his 78th year.

YOUNG.—On the 28th ult., at Hastings, Thomas Young, L.R.C.P.Ed., L.R.C.S.Ed., L.F.P.S.Glas., L.M. (brother of G. W. Young, Surgeon, of East Ardsley, near Wakefield), aged 34. (Deeply lamented.)

N.B.—*A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 21st, 1887.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
July 15	30·15	W.	64	60	104	78	59	...	Overcast
,, 16	30·19	N.	63	59	114	76	59	·14	Hazy
,, 17	30·20	N.E.	64	57	111	69	53	·09	Cloudy
,, 18	30·24	N.E.	57	51	113	72	49	·07	Bright
,, 19	30·28	N.E.	63	55	116	78	52	...	Hazy
,, 20	30·30	N.E.	68	60	123	81	58	...	Hazy
,, 21	30·25	E.	64	59	112	75	59	...	Bright

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication

We cannot prescribe or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked and addressed to the Sub-Editor.

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "to the Publisher."*

We cannot undertake to return MSS. not used.

THE VALUE OF THE SUNFLOWER.

IT is stated on the authority of a Cuban journal that since the sunflower has been cultivated in certain swampy districts on the banks of the river Potomac malarial fever has almost ceased to be endemic there. Similar beneficial results appear also to have followed the cultivation of this plant in the neighbourhood of the mouth of the Scheldt in Holland. The editor of the *Monthly Journal of Pharmacy*, who has been engaged in observations on sunflowers, found that during the month of June, 1885, a quarter of an acre of sunflowers exhaled, with a mean temperature of 70° F. at midday, exactly 1950 gallons of water in the form of vapour, or sixty-five gallons a day. He attributes the antimalarial action of the sunflower therefore not only to its properties of absorbing and destroying the malarial miasm and of emitting an abundance of pure oxygen, as taught by other writers, but also to its great capacity, owing to its rapid and vigorous vegetation, of absorbing and utilising the moisture of the soil in districts which are unfit for human habitation. He likewise suggests that the aromatic odour of the flowers may perhaps be possessed of antiseptic virtues.

Diploma.—Our correspondent should address a complaint to the registrar, and failing to get satisfaction, to the Registrar-General; also to the Apothecaries' Company. The Medical Council also should receive a statement of the facts, though its power to interfere is less than that of the other authorities. We do not understand our correspondent to imply that certificates of vaccination are accepted.

A.M.D.—We have no recollection of the reference mentioned.

DANGERS OF SWING-BOATS.

To the Editors of THE LANCET.

SIRS,—The following case is another instance—if further evidence were necessary—of the danger of swing-boats [illegible] not properly guarded in places of public amusement.

A young woman, whilst watching a s[illegible]ame unconsciously too near to one of these stands, and on turning round received a blow in the face from one of the boats in its ascent. She was knocked down and much bruised, and both her upper central incisors were dislocated from the maxilla, one being transversely fractured at the centre of the crown. Their attachment to the gum was fortunately undisturbed. With traction and a little manipulation the teeth were both returned to their sockets, and became firmly fixed eventually. Still, the loss of a front tooth is a matter of considerable moment to a woman, and the results might easily have been worse, as we have seen before.

I am, Sirs, faithfully yours,

Skipton-in-Craven, July 17th, 1887. C. W. SESSIONS BARRETT, M.B.

AN INDIAN REMEDY FOR TAPEWORM.

To the Editors of THE LANCET.

SIRS,—In reply to a correspondent's letter in your valuable columns of May 28th last, asking for a remedy for the cure of tænia solium in a case in which male fern, kousso, and pelleterin had each and all been tried unsuccessfully, may I suggest to him to try the powdered seeds of *Embelia ribes*, called by the natives, "bso-birang." If your correspondent is unable to procure these seeds from any druggist in London, and will place himself in communication with me, I will very gladly put him in the way of getting any quantity of them. I have used this drug for the past four or five years in cases of tapeworm amongst Europeans and natives with good results, and it is a favourite Indian remedy in this disease. I have usually given from one to four drachms (or even more) of the powdered seeds with milk or with curds early in the morning, fasting, following it up some hours later with a purgative dose of castor oil. This latter I have found nearly invariably necessary, as the seeds themselves are not purgative. The seeds are about the size and shape of pimento seeds, and are not unpleasant to take, being slightly aromatic in taste. The dose which is efficacious is, I admit, unpleasantly large, and possibly if the active principle could be isolated it could be given in a much smaller dose, and more palatably. I have asked Dr. Warden, the Chemical Examiner in Calcutta, to try to isolate this active principle. Dimmock, in his recent work on the Materia Medica of Western India, mentions that the seeds of the *Embelia ribes* are largely imported into Germany, and form the chief ingredient in several patent medicines for tapeworm. I can vouch for the efficacy of this remedy when given in full doses, repeated every morning if necessary; and I have never seen the slightest ill effects follow its use. The general price of the seeds is about sixpence for 2 lb. Will "Puzzled" give this simple remedy a trial?

I am, Sirs, yours faithfully,

Simla, June 24th, 1887. GEO. H. HARRIS, L.R.C.P.Lond., M.R.C.S.

Mr. James S. Horsfall.—We should recommend our correspondent to make application to the Secretary of the St. John Ambulance Association, St. John's Gate, Clerkenwell.

G. M. Ross should address the editor of the paper in which the extract appeared.

Dr. Dudley Buxton.—The paper is marked for early insertion.

PUNCTURE OF THE ABDOMEN.

To the Editors of THE LANCET.

SIRS,—The following case may be of interest in connexion with Dr. Ogle's article on Relieving Tympanites by Puncture of the Abdomen.

Some few years ago, when practising in Gloucestershire, I attended a case of occlusion of the bowels, which continued unrelieved for ten or twelve days. There was much pain, stercoraceous vomiting, and great distension, causing difficulty of breathing, syncope, &c. Finding matters going from bad to worse, and having failed in all other kinds of treatment, I, with the consent of the patient's relatives, punctured the abdomen with a small-sized trocar and cannula in two different places, where the bulging was most prominent, allowing the escape of a quantity of very fetid gas. This operation was followed by immediate relief of all the distressing symptoms, and in the course of three or four days the bowels acted, and the patient recovered. I was induced to try the operation for two reasons, the first being that I had read Trousseau on this subject, who states that punctures of the abdomen in such cases are likely to be productive of benefit, and that they are neither very painful nor dangerous; the second was that I had seen similar treatment adopted in the case of cattle suffering from distension from over-eating with satisfactory results. I think I should always consider myself justified in acting similarly in other cases, having failed in the usual forms of treatment. I am, Sir, your obedient servant,

Stroud Green, N., July 15th, 1887. HUGH G. WEBB, L.K.Q.C.P., &c.

REGISTRATION OF FOREIGN DEGREES.

To the Editors of THE LANCET.

SIRS,—Permit me to call attention to the cool manner in which the Medical Council performs its duties. By the new Medical Act it is lawful for certain foreign graduates to register their degrees, and the day fixed by Parliament for doing so was June 30th at latest. I sent my degree up to the registrar, with a request that it should be registered on June 30th, and I have had no notice taken of it so far; and now I hear that the Executive Committee is called for July 25th to consider the matter. Had I been registered at the proper time, I should in all probability have been elected to an important office, for which a registered M.D. is a *sine quâ non*. It is now filled up, and I am still unregistered.

I am, Sirs, yours truly,

July, 1887. M.D.

*** Our correspondent's case seems hard, though he does not give us particulars of his other qualifications, if any. But the law does not contemplate a hasty or wholesale registration of foreign degrees, but a careful consideration of the case of each university. Even under Clause 16, providing for the description of foreign and colonial titles to be added to the names of already registered practitioners, the Council has to be satisfied that the degree has been obtained after proper examination, and before the passing of the Act—conditions that require a little time.—ED. L.

UNQUALIFIED ASSISTANTS.

To the Editors of THE LANCET.

SIRS,—Though a great many letters have already appeared on the above subject, I trust you will insert this, as our position daily becomes more serious, and it behoves us to do something in our own behalf. The vital question now is, What is to become of us? Are we to starve, if the law and the medical profession itself make it impossible to obtain employment, as now seems almost the case? By our previous training we are totally unfitted for anything else. Business men can obtain *employés* ingrafted from boyhood with business, who are for this reason of far greater value than one without experience, however well educated. Chemists, if we are willing, will not employ us without previous apprenticeship, which closes their portals to us. There is no denying the hardships of those who, like myself, besides often being the sons of medical men, have matriculated at a university, and entered as *bonâ-fide* students, when, after undergoing half or more of the curriculum and passing some of their examinations, they have through pure misfortune to break off and go as assistants. My testimonials will prove that my hospital work and several years' experience in large general practices, together with hard reading at the same time, have made me competent to obtain a livelihood in some defined medical capacity. Can you, Sirs, suggest any plan for our benefit? And I also appeal to the members of the profession to aid us, who, had fate been propitious, would long ago have been numbered in their rolls. I have no doubt all would be willing to undergo a fair test, so that we could, as has been before suggested, be registered as assistants. We are, unfortunately, heavily handicapped by the large number of newly qualified hospital men constantly being added to the number of competitors for a livelihood in medicine, but who—and it is the expression of medical men themselves—are our inferiors as far as private practice is concerned. Apologising for occupying so much space,

I am, Sirs, yours sincerely,

July, 1887. AN UNQUALIFIED ASSISTANT.

Educationist (Brighton).—1. The competing claims of literature and science in the mental equipment of youth were quite well known in the first century.—2. The passage is from Petronius Arbiter I. (ed. Bücheler): "I am of opinion that our boys at school are made very unintelligent, because they neither hear nor see any of those things which are in practical use" (Ego adulescentulos existimo in scholis stultissimos fieri, quia nihil ex his quæ in usu habemus aut audiunt aut vident).

A. B. C. would no doubt obtain the information he desires by application to the Secretary of the Brussels Medical Graduates' Association, Dr. Pocock, The Limes, St. Mark's-road, N. Kensington.

Young Diabetic.—We do not prescribe.

"REMOVAL OF BREAST TUMOUR WITH THE AID OF COCAINE."

To the Editors of THE LANCET.

SIRS,—In your issue of June 18th I find a very interesting report of removal of adenoma of the breast with cocaine as the anæsthetic. Inasmuch as Mr. Grün used very strong solutions of the drug, and also believed it to be the first case of removal of a tumour of the breast under the influence of cocaine, I beg leave to call your attention to a case of amputation of the breast under cocaine published in the *New York Medical Record* of June 4th, 1887. The operation was performed in the New York Skin and Cancer Hospital on March 27th, the patient being seventy-eight years of age, and having a double cardiac murmur. In other words, ether was positively contra-indicated by the condition of the patient. The anæsthetic was confined to the region of operation by the use of a large rubber ring, as devised by Dr. F. L. Corning of this city. A two per cent. solution of cocaine was then injected into the skin along the entire line of incision, which I first traced with tincture of iodine. Then the base of the tumour was flooded with the same solution. The operation was painless and exceedingly satisfactory. It might be well to state that only three drachms of this two per cent. solution were used, the operation lasting twenty-five minutes. When presenting the case to the Surgical Section of the New York Academy I expressed the opinion that some modification of Dr. Corning's device would enable us to remove such tumours, even after they have invaded the axilla, in cases where general anæsthesia is inadmissible.

I am, Sirs, yours very truly,

New York, July 7th, 1887. DANIEL LEWIS.

Rev. Robert Sorsbie.—There is no recommendation of the system to be found in THE LANCET of the date given. The passage may have been extracted from an advertisement.

Cavendo tutus.—We are not aware of the existence of any book of the character mentioned.

Inquirens and *Truthful James* have not enclosed their cards.

HAY FEVER: CORRIGENDA.

To the Editors of THE LANCET.

SIRS,—In my letter published in your last issue may I ask that *gastro-intestinal* may be read for "gastric intestinal," and *infliction*, or possibly more correctly *deflection*, for "infliction."

I am, Sirs, yours faithfully,

July 18th, 1887. J. PERCIVAL HUNT.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Savage, London; Mr. Barwell, London; Dr. Ogle, London; Mr. Edmund Owen, London; Mr. W. Anderson, London; Messrs. Clarke and Co., London; Mr. H. W. Page, London; Mr. C. Steele, Clifton; Mr. F. J. Smith, London; Dr. Stewart, Nottingham; Mr. Laurence Humphry, Cambridge; Mr. Lightowler, Southport; Messrs. Hall and Son, London; Dr. Swan, Batley; Mr. Fuge, Taunton; Messrs. Hogg and Co., London; Surg.-Major Boileau, Ferozepore; Messrs. Sharrow and Anderson, London; Mr. H. G. Webb, Northleach; Messrs. Clark and Co., London; Mr. B. Walker, Spondon; Mr. Daniel Lewis, New York; Dr. Travers, Sutton; Mr. Sessions-Barrett; Messrs. Vickers and Co., London; Mr. G. Harris, Simla; Dr. Shirtliff, Kingston-on-Thames; Dr. F. W. Bennett, Leicester; Mr. A. B. Macdowall, Gadebridge; Mr. C. E. Jennings, London; Mr. Blackett, London; Mr. F. Lawrence, York; Mr. J. W. Vickers, London; Dr. Flothmann, Ems; Dr. Hillar, Kennington; Mr. McBryan, Hanwell; Mr. Hodgetts, Smallheath; Dr. Muirhead, Edinburgh; Mr. Hannay, Newcastle-on-Tyne; Mr. Thompson, London; Mrs. Read, Shanklin; Mr. Dowell, London; Mr. Lloyd, Lampeter; Mr. Hyde, Buxton; Dr. Reid, Kingsland; Dr. T. Oliver, Newcastle-on-Tyne; Mr. Horsfall, Sowerby Bridge; Mr. Taylor, Cambridge; Dr. Millar, Glasgow; Mr. D'Arcy Power, London; Mr. H. T. Rutherford, London; Mr. Inland, Beech Haven; Mr. J. A. Francis, Southsea; Dr. Thudichum; Dr. John Lucas, London; Mr. Addison, Tipton; Mr. Davis, Brighton; Mr. J. J. Tobin, Ilkeston; Mr. Parker, London; Dr. Bower, Bedford; Mr. T. P. Smith, Reigate; Mr. Bremner, Manchester; Mr. H. F. Philpot, London; Mr. H. T. Roxby, London; Mr. Scott, Penrith; Mr. Jordan, Manchester; Mr. A. J. Harvey, London; An Old Correspondent; Truthful James; M.D.; Forum; F.R.S., Droitwich; A. B.; Cemetery Chaplain; M.D., St. Ives; Bee; Puzzled; Matron, Batley; Cavendo Tutus; Warner; Delta; Somebody, Chalfont St. Peters; H. C.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Taylor, Cannock; Dr. Seaton, Sunbury-on-Thames; Mr. Smith, Tunbridge Wells; Mr. Ostell, Carlisle; Mr. Cox, London; Mr. Hutchinson, Newmarket; Mr. Blackwood, Liverpool; Mr. Derry, Leeds; Dr. Johnston, Sheffield; Mr. Kilvington, Hartlepool; Mr. Milne, Huntley; Mr. J. Wolff, London; Mr. Hartley, Huddersfield; Messrs. Burgoyne and Co., London; Dr. Apjohn, Kilkee; Mr. Ernst, London; Messrs. King and Co., London; Mr. Hanson, Dhar, India; Messrs. Higham and Co., Hyde; Mr. Hunt, Bristol; Mr. Cooke, Newtown; Messrs. Geddes and Co., London; Dr. Ward, Oxford; Mr. Teague; Messrs. Bell and Co., Edinburgh; Dr. Bennett, Chatham; Mr. Sawyer, Shaftesbury; Dr. Collier, Cranford; Dr. Stewart, Morpeth; Dr. Chisholm, Liverpool; Dr. Case, Nottingham; Dr. Roulston, Wakefield; Mr. White, Bayswater; Mr. Effernan, Bootle; Mrs. Mauger, Ventnor; Mr. Sutton, Pontesbury; Mr. Barlow, Birmingham; Mr. Bigg; Messrs. Loeflund and Co., London; Mr. Chadwick, Lancaster; Miss Pudney, Earl's Colne; Mr. Poppet, Newport; Dr. Munroll, Oldham; Messrs. Read and Co., Bristol; Dr. Barret, Littleport; Mrs. Burns; Mr. Young, East Ardsley; Miss Beldon, Royston; Mr. Moulding; Mrs. Butler, Gipsy Hill; Mr. Preston, Liskeard; Mr. Blount, Preston; Messrs. Beal and Co., Brighton; Mr. Forrest, Camberwell; Mr. Irving, Altrincham; Mr. Heygate, Cosham; Mr. Beckton, London; Mr. Hunt, Southampton; W. W., Bath; Medicus, Bristol; J. P., Camberwell; Ames; Glasgow Apothecaries' Co.; Fechden; G., Whitby; L. D.; Royal Mail Steam Packet Co., London; Matron, Leeds; Veritas, London; B.A., Nottingham; X. Y. Z., Leeds; Matron, London; S. W.; K. W. D.; Matron, Newark; Nomen; H. J.; Medicus, Dalton-in-Furness; Bona Fide, Horsham; Tenens, Everton; Buxton; Tax; M.D., Bristol; A. A., Stafford; H. A. S.; C. D., Congleton.

Schoolmaster, Manx Sun, Liverpool Courier, Retford Mercury, Bath and Cheltenham Gazette, Skegness Herald, Daily Telegraph, The Christian Commonwealth, Leamington Advertiser, Tiverton Gazette, Ilfracombe Chronicle, Burton Chronicle, Skyrack Courier, Scottish News, Sydney Echo, &c., have been received.

Medical Diary for the ensuing Week.

Monday, July 25.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10.30 A.M., and each day at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITALS.—Operations, 2 P.M., and each day in the week at the same hour.

Tuesday, July 26.

GUY'S HOSPITAL.—Operations, 1.30 P.M. and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2.30 P.M.; Saturday, 2.30 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M.

Wednesday, July 27.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday & Saturday, same hour.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Saturday, 2 P.M. Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
KING'S COLLEGE HOSPITAL.—Operations, 3 to 4 P.M.; Friday, 2 P.M.; Saturday, 1 P.M.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9 A.M.; Saturday, same hour.

Thursday, July 28.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
NORTH-WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

Friday, July 29.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, July 30.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

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